THE TIMES
Higher Education
SUPPLEMENT

Open college 'would not take from other sectors'

by Frances Gibb

Lord Crowther-Hunt, Minister of State for higher education, emphasized this week that an "open college" would cater both for 16 to 19-year-olds and adults wanting to return to education.

But he made clear that there would be no shift in resources from the initial to the recurrent stages of education.

Lord Crowther-Hunt told the annual conference of the Association for Adult Education in London that the most that was possible was a gradual shift in the balance of resources, by giving the recurrent stages more as they became available, rather than giving other stages less.

An "open college" might be organized on the lines of the Open University, and provide a multi-media alternative to the present adult education service, he said. It could combine distance teaching with face to face tuition, and might prove to be more cost-effective than present services.

Perhaps there would not be one "open college", but rather a number of them geared to the needs of the regions they served.

These issues would be discussed at a conference being organized next autumn which will bring together representatives from broadcasting, correspondence colleges, the Technician and Business Education Councils and examining bodies. If an "open college" seemed to offer the possibility of more imaginative educational provision for more people at less cost, a pilot project or feasibility study might be set up.

Government action on the Russell Report had been delayed because of cuts in education expenditure, he said. But one recommendation that might be implemented was the establishment of a Development Council for Adult Education, which would identify priorities within adult education, assist planning and provide a forum for those involved.

●The £1m adult literacy programme could still fail through lack of adequate funds, according to the project's administrators who say £1m is hardly enough to lay the foundations.

Mr Robin Gray, chief administrator for the programme in Lancashire, estimated each volunteer would cost about £100 per year. This would cover travelling expenses, outlay on books and equipment, and the salaries of tutor organisers who would supervise lay volunteers.

But in his own borough, where about 1,000 volunteers were being trained, costing £100,000 by his estimates, the authority had voted for an allocation of only £10,000—"and they told us they were being generous".

Mr Gray said the challenge being presented was unique in the history of adult education.

"The Government has put its faith in adult education and we are being asked to justify our existence with a project which is spotlighted by public attention. If we fail in this, we will never be able to hold up our heads again."

Delegates passed a resolution urging the Government to ensure that adequate financial support is given for the deployment of essential resources, both human and material for this and succeeding years. It also asked that every local authority should match the effort expected of volunteers involved in the project.

Mr Tom Driver, general secretary of the ATTI, reviews the implications of the £6 limit for salaries in colleges and polytechnics

Increments could be threatened

So far as can be ascertained from the White Paper there are three major effects of the salary proposals on the further education scales from August 1, 1975.

· It appears that the agreement recently made to operate from April 1, 1975, will be accepted by the Government, as paragraph 8 says "that settlements may also be implemented for groups which, before the date of publication of this White Paper, have reached agreements for annual settlement dates not later than September 1, provided that they have had no principal increase under the existing TUC guidelines within the last 12 months".

· The Burnham Further Education Report was finalized on Tuesday, July 8, and will therefore presumably be honoured by the Government and will not be affected by the new proposals.

The part of the settlement which may present difficulty is the implementation of the paragraph which says that rates of salary for teachers in part-time service shall be reviewed and shall have effect from April 1, 1975.

This review is on a regional basis and then has to be implemented by decision of each local authority. Some of the regional negotiations will be completed in the next few days but the recommendations will still have to be decided locally. The association is seeking to ensure that this element is covered.

The first major impact will be felt in September when full increments are due for the first time, and not in April, for all an incremental points of the scales.

The White Paper is far from clear on the implication for incremental scales. In fact there is no reference

to this problem in the government statement. There is however an annex which is an extract from the TUC statement "The Development of the Social Contract".

The White Paper says (paragraph 7) that "this extract sets out the requirements which should be observed by those determining pay over the whole period of this White Paper until August 1, 1976" (with one exception to be mentioned later in my comments). The annex states that "already established incremental and wage-for-age scales are payable provided that this does not raise the overall wage bill by more than £6 per head".

The implication of this is that increments will be payable in September but the net cost of the increments will be taken from the bill up to a maximum of £6 per head for all further education teachers due for increases between August 1975 and the end of July 1976. In other words there will not be the equivalent of a £6 flat rate for all next April when a review is normal but an increase of the equivalent of £6 per head less the cost of increments in September 1975.

This will certainly apply up to the end of July 1976. What the overall figure will be is not known at the moment but it will certainly be less than the equivalent of £6 per head. The effect of this on the pay differentials must be clear to all.

The third feature is the introduction of a cut off point beyond which no increase will be payable—presumably not even increments. The cut off at £8,500 (the TUC had proposed £7,000) affects heads of departments grade V on points 3 and 4 of the scale and all heads of department grade VI.

For those on fixed points it means no increase for any vice-principal in group 6 or above and for most in group 5, and no increase for any principal in group 4 and above and almost all in group 3.

The overall effect will be to create confusion in the salary scales at the top of the profession but will give relatively greater percentage increases at the bottom.

NEXT WEEK: Mr Laurie Sapper on the implications for the universities.

British Council criticized for 'costly' HQ move

The British Council was strongly criticized this week for excessive spending in its move to new headquarters at Spring Gardens, the Mall, in the third report from the Committee of Public Accounts, 1974-75.

"It seems to us that the Council had neither the staff expertise nor resources to cope with a project of this magnitude," it says. "The Council might have been wiser to refer the project to the Department of Environment, which has the organization to deal with such projects, and should certainly do so in the case of future projects."

The committee notes the rapid increases in the Council's estimates of the costs of occupational services. They rose from £350,000 in 1968 to £510,000 in November 1970, and then to £795,000 in February 1973 and finally to £936,000 in October 1974.

It comments on the increase in the provision for interior decoration and air conditioning from £40,000 to £150,000. "While we recognize the special position of the council, we are surprised that standards were adopted so much above those normal to Government offices."

The council admits these increases were partly due to error and says they had not examined sites fit only to be housed as closely as they might have done, the committee says.

Although the new building was intended to house all the council's London staff, increases in staff had meant that only 361 of the 1,835 staff could be housed in it.

Part of the deficit, £152,888 at the end of March, was due to an error in estimating the effect of salary increases.

●The Ministry of Overseas Development spent £7.7m in 1973-74 on bringing students from developing countries to Britain for training, the committee notes.

Diabetics may benefit from enzyme research

A husband and wife team of biochemists at the University of Dundee has been awarded a medical research council grant of £56,141 to continue the study of two new enzymes which could lead to a breakthrough in the treatment of diabetes.

The new enzymes, discovered in muscle cells by Dr Philip Cohen, 29, and Dr Tricia Cohen, 30, are an important link, they believe, in the chain by which the hormones adrenalin and insulin affect carbohydrate storage in the body.

Their work could reveal the cause of the "maturity onset" type of diabetes which occurs later in life and is not associated with the insulin molecule itself being absent. The majority of Britain's 500,000 diabetic victims fall into this category.

It is now known that although hormones do not actually penetrate cells, they do influence what goes on inside them. But how this process takes place is not yet fully understood.

Dr Philip Cohen said: It appears that these normally minute amounts stimulate the formation of so-called secondary hormone messengers.

Compensation details before Parliament

Statutory regulation 1092 of 1975, announcing the Government's terms of compensation for 11,000 college of education lecturers affected by reorganization was laid before Parliament on Tuesday. The new regulations take effect from August 1. Fuller details will be published by the *THES* next week.

Schools assessment unit

Professor Barry Supple, of Sussex University, is to be the first chairman of the consultative committee to be set up in connection with the Assessment of Performance Unit. The unit, aimed at developing methods of monitoring the achievement of school children, will operate within the DES.

New moves to curb Trent's city centre growth plans

Further cuts aimed to curb the development potential of Trent Polytechnic in the city centre have been put forward by Nottingham District Council.

The new scheme would leave the polytechnic with less than half the acreage of the original development plan and, if implemented without alteration, would leave only nine acres for new buildings compared with a 55-acre original scheme.

A critical report compiled by the directorate of the polytechnic says: "The area of land available for development has been so reduced that it may be questioned whether it remains adequate to meet the development needs for 5,000 full time equivalent students on the city centre site in terms of a coherent plan for a major institution of higher education."

The report says that although 26 acres are allocated for redevelopment, existing buildings on the site account for 13.3 acres. This leaves only 12.8 acres available for rebuilding.

"Assuming that some 70 per cent (a very generous proportion) of the undeveloped land were to be usable it leaves only an area of 8.96 acres to bring the city centre facilities up to DES approved standards."

The directorate is also critical of the lack of consultation available to the polytechnic before the district authority announced its intentions. "The first news of the meeting was heard in a Radio Nottingham broadcast", says the report.

Mr Ben Davies, chief administrative officer of Trent Polytechnic, said that the polytechnic council had decided to ask the district authority and Nottinghamshire County Council to agree to a five-point plan.

This included ensuring that the new revised city centre was a final plan; asking for a new development plan for the future of the polytechnic after the merger with Nottingham College of Education; asking for a phased programme of rehousing groups and people from the revised site so that developments could be exploited to the full; and asking for compensation for five acres of lost land to be replaced by adding to the Nottingham College of Education site.

The polytechnic is also concerned that its new library and resources centre should be given adequate development space once the project can begin in 1976.

Who reads which newspaper

University graduates tend to become readers of *The Guardian* while *The Times* and the *Financial Times* rely for the bulk of their readers on those who left school after O or A level, according to a study published by the International Publishing Corporation.

The marketing research department of IPC are publishing a series of "sociological monographs" and their study of education shows the main readership of the "quality" press is among those who left school between 16 and 18. *The Guardian* has equal proportions of those who went into higher education and the 16 to 18 leavers. About 25 per cent of *Guardian*, *Times* and *FT* readers left school at 15.

The *Daily Express* and the *Daily Mirror* had about 3 per cent of their readers who had been in higher education, against 70 per cent who left school at 15. The figures, based on the national readership survey of 1973-74, show *The Observer* having 23 per cent of its readers from higher educational backgrounds and *The Sunday Times* 26 per cent.

IPC Sociological Monographs "Structure and Content of Educational Development", £5.00, Athene House, 66 Shoe Lane, London, EC4.

Saudis and Welsh combine on £370,000 project

The Saudi Arabian ministry of agriculture and water is financing a £370,000 three-year project between the University College of North Wales, Bangor, in agricultural research and development.

The project, which succeeds the original five-year project between the two institutions, involves an increase from four to seven in the number of UCNW scientists working in Saudi Arabia, in addition to the increased budget.

The project is based near the town of Hofuf, inland from the Persian Gulf, where for the past five years a team of four research officers paid by the British Overseas Development Administration and responsible to the agricultural department at UCNW, has been engaged on research and development work in forage and animal production.

● The Polytechnic of Central London has concluded two agreements with Iraq under which groups of Iraqi students will take courses at the polytechnic.

The first agreement, with the Iraqi Foundation for Technical Institutes, involves 35 students and the second, with the Iraqi University of Technology, 70. Both schemes start in autumn.

NEXT WEEK

Roy Niblett on the need for breadth in higher education.

Guy Neave on manpower planning

Eric Hewton on the training of university teachers.

Professor A. R. Manser on a new book by Raymond Aron.

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Printed and Published by Times Newspapers Limited at New Printing House Square, Gray's Inn Road, London WC1X 8EZ, England. Friday, July 25, 1975. Registered as a newspaper at the Post Office. Inland rates postage paid at New York, N.Y. and at other offices.

THE TIMES
Higher Education
SUPPLEMENT
July 25, 1975. No. 196 Price 12p

THE LIBRARY - THE UNIVERSITY OF JORDAN

1,000 university posts may be vacant

by Brian MacArthur

A survey by *The Times Higher Education Supplement* suggests that at least 1,000 academic posts in universities were left vacant during the past academic year as an economy measure.

Out of 20 universities which answered questions about the effects of the Government's squeeze on university budgets, 16 reported that they had left some 380 posts unfilled as an economy measure.

Assuming that the same was true for the entire university system, and the survey under-represents the bigger universities, at least 1,000 posts would have been vacant.

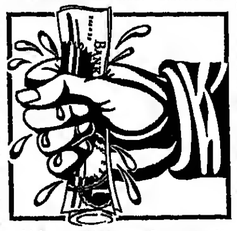
Monitoring by the marketing department of Times Newspapers shows that appointments advertising for British universities has fallen by 40 per cent this year compared with 1974.

Other evidence from the survey shows that universities have been forced to make unprecedently severe economies since October, when some vice-chancellors were talking about bankruptcies.

It discloses a striking deterioration in the staff-student ratio, which was 1:8 in 1973-74, compared with 1:5.8 in polytechnics. Within a year it has distinctly worsened, while university teachers have seen their salaries overtaken by lecturers in polytechnics.

Only three of the universities which answered the survey—Edinburgh, Strathclyde and Stirling—had staff-student ratios in the range of 1:8. All were higher than 1:8 (and Edinburgh has a big medical school, where the ratio is usually much lower).

Of the nine other universities



which provided details on staff-student ratios, seven had an average ratio of at least 1:10. Each told the same story of staff-student ratios in arts and social sciences departments of 1:13 or 1:14. At St Andrews, the ratio in the psychology department is 1:19.

At least 14 of the 16 universities which answered a question on budgets said that they were expecting a deficit next year, in spite of thoroughgoing economies.

Vice-chancellors were asked if they had any comments to make on the series of speeches made recently by Lord Crowther-Hunt, Minister of State for Higher Education. The tone of the response was perhaps expressed most eloquently by Dr G. M. Carstairs, vice-chancellor of York University, who said:

"We listened with chagrin to Lord Crowther-Hunt's argument that universities could save large sums of money if they were to lower their ratios from 1:8.4 to 1:9 or 1:10. During the past year most of our departments have had ratios over 1:11.

"Even after the restriction of some posts, the average ratio in departments directly engaged in teaching will be just over 1:11 during 1975-76. If we include our attached institutes and centres, the staff-student ratio is still worse than 1:10."

Mr J. Steven Watson, principal and vice-chancellor of St Andrews added: "It is rather galling to read that Lord Crowther-Hunt thinks that institutions in the higher education sector must tighten their belts and accept an increase in the student-staff ratio from 7.4 to 8.5:1, when our ratio in St Andrews is standing at 10.5:1."

continued on page 24

CVCP wants foreigners to pay more

by Alan Cane

Postgraduate places for all students "qualified, suitable and keen" to go beyond first degree level and improved postgraduate grants are among the chief recommendations in a report published this week by the Committee of Vice-Chancellors and Principals. The report on postgraduate education emphasizes that overseas postgraduates must pay a greater proportion of the true cost of their education than British students, and warns that any further shift of emphasis from research to teaching in the universities could be dangerous.

The report is a "green paper" to stimulate discussion in universities, Parliament, Whitehall and industry. A further and definitive report is to be published later in the year.

Sir Derman Christopherson, vice-chancellor of Durham University and chairman of the working group which produced the report, said this week that it was an attempt to give a proper perspective to the various kinds of postgraduate work in the universities. The report defines professional qualifying courses, "taught" courses, post-experience courses and research.

It emphasizes the importance of research in the universities: "Some members of Parliament and the public sometimes appear to regard universities as teaching institutions with functions no different in any essential way from those of schools. It is one of our main purposes in this report to do what we can to correct that misconception".

The report points out that masters degree courses are undervalued in Britain: "The universities should consider in consultation with industry what can be done to make them as well and as widely appreciated as they have become in the United States and Canada".

On postgraduate grants, the report hints that the amount which undergraduates are allowed to earn in the vacation or during sandwich supplementary benefits should be added to postgraduate awards.

The report says there are strong reasons for maintaining a substantial proportion of overseas students in the universities, but changes in the political and economic climate mean that they should pay more than home students. However, the fees should not be out of line with those charged in western Europe or the United States.

For the future, the report argues that the undergraduate principle of a university place for every student able and willing to take it up should apply equally to postgraduates.

Text next week

Exclusive: full details of college plans for 1981

Government likely to reprieve 17 colleges of education

by David Hencke

The Government has decided to close 13 colleges of education instead of the 30 announced in March by Mr Prentice, the former Secretary of State for Education.

I understand a circular outlining the Government's intentions is expected to be issued next month when the 1976 teacher training intake figures for colleges are released. The circular should include an appendix showing the provisional teacher training numbers for every college and polytechnic department in 1981.

The 13 to be officially closed are: Alnwick; Darlington; Wentworth Castle, Barnsley; Radbrook, Shrewsbury; St Paul's, Rugby; St Peter's, Saltley; Mary Ward, Nottingham; Colemp, West Wickham; Futteridge Bury, Luton; Saffron Waldeo; Culham, Abingdon; Hockerill, Bishop's Stortford; and Steengbourne.

Darlington, St Peter's, Culham, Hockerill and Stringbourne could be comprised since their future is still officially "under consideration". The teacher training department at Huddersfield Polytechnic, which was also on the closure list, was reprieved last week.

A detailed analysis of the 1981 figures given in the proposed circular will show that the number of effective closures could be substantially higher.

Many of the colleges will have little more than 350 teacher training students and St Mary's, Bangor and Bangor Normal will have 200 students each. The smallest teacher training institution will be the Peterborough annexe of Keeteven College of Education, Grantham, which will have 135 students.

The Government's list also gives a joint teacher training figure for two or more institutions. In some cases, this figure is so low that it is unlikely that teacher training could be maintained on the two campuses.

Examples include the figure for Preston Polytechnic, where 550 students are allocated for the two campuses of the former Chorley and Fulton-le-Fylde colleges. In 1974, they had 1,650 students.

Others include a joint figure for Hereford and Shensions of 450 students compared with the present 1,500, and Bishop Otter and Bognor Regis, 700 compared with 1,510.

The total figure for 1981 also exceeds the revised figure of 60,000 places given by Mr Prentice last March by more than 1,000. This will mean it will have to be trimmed at a later date.

In addition, the figure assumes that in-service and induction training will be implemented in full by local authorities. This is unlikely to happen and will mean a further reduction.

It is understood that a discussion of the Government's proposals may have taken place at yesterday's meeting of the Advisory Committee for the Supply and Training of Teachers. Until this meeting however, the Government had not released copies of its proposals, even to members of the advisory committee.

PROVISIONAL FIGURES OF TEACHER TRAINING PLACES IN COLLEGES OF EDUCATION AND SCHOOLS EDUCATION DEPARTMENTS IN POLYTECHNICS FOR 1981

College	Figure
Bede and St Hild's, Durham	700
Bishop Lonsdale and College	400
St Mary's, Twickenham	600*
Charlotte Mason	400
Carlisle	Nil*
Newton's Cross, Northumberland	400*
Teesside College and Middleton St George	700*
Newcastle Poly and Northern Counties	600*
Dudley and Crewe	500*
Hull, Hull College and Poly	600
Leeds Metropolitan Poly and City	1,000
Bretton Hall, Wakefield	400
Bradford and Ilkley	1,000
Bolton and Manchester	700
Sheffield City and Polytechnic	1,500
Rippon and York St. John's	700
Trinity and All Saints, Leeds	700
Leeds Poly	700
Huddersfield Poly	500
Bishop Otter	700
Chichester and Alsager	1,000
Keele Poly	500
N.E. Manch	500
Manchester Polytechnic, Oldbury, Dudley and Walsall	1,000
Elizabeth Gaskell	1,850
Edge Hill	670
Preston (Chorley and Fulton)	550
St Martin's, Lancaster	550
Anglesey	1,000
Coventry	700
Madeley	700
Newman	600
Worcester	Figure
Bradwood	Nil
St Paul's, Rugby	Nil
Westhill	700*
Nene Kettering	700*
Whentons: Hereford	450*
Worcester	700*
St Peter's, Saltley	700*
Wolverhampton Poly	700*
Bishop Grosseteste, Lincoln	400
Bishop Lonsdale	400
Loughborough	600
Northampton	600
Mallock	500
Trent Poly and Clifton	400
Mary Ward	Nil
Salon Hall	400
Keelevan	1,000
Nottingham	800*
Norwich Hall, Norwich	500*
Avery Hill	670
Garnett Hood	500
Maple Cross	
West Herts	350
Kingston Poly (Dingy Hill)	800
Kingston Poly (Penta Park)	800
North London Poly	800
Thames Poly (Woolwich)	350*
Thames Poly (Woolwich)	400
Hammersmith Institute	
Poly of Central London, Whitelands Southlands and Trevelyan	1,500
Poly of Central London, Rachel McMillan and Battersea	1,000*
Poly of South London (Borough Road)	900*
South Bank Poly (Battersea)	900*
Bedford P O	500
Berkshire	700
Brighton	600
Eastbourne (3 colleges)	Nil
Maryland Park, Chalfont St. Giles	400
Portsmouth	700
Southampton	700
Sufferdoe Bury	Nil
Culford Weston	Nil
Dartford	400*
Christ Church, Canterbury	750*
St Alban's and St Michael	500*
Bursum, St Michael	500*
Bishop Lonsdale	400*
Milton Keynes	300*
Oxford Poly	800*
Oxford Poly (Lady Barnicot Churchill)	300*
Wall Hall and	
Wall Hall and	700
Bishop Otter and	
Bognor Regis	750
Chichester	Nil*
Culham	Nil*
Bishop Otter	Nil*
Nottingham	Nil*
Trent Poly	Nil*
St Mary's and St John	500
Poly of Newton Park	
Radland	Nil*
St Matthias	1,400
Ripon	800*
St Luke's, Exeter	600
St Paul's, St Mary's and Gloucestershire	1,000*
Weymouth	300*
Caerleon	600
Cartrefle	600
Glamorgan Poly (Treforest)	600*
Cardiff	600*
Cardiff, Barnor	600*

UCCA appoints new chairman

Dr H. R. Pitt, vice-chancellor of the University of Reading, has been appointed chairman of the Universities Central Council on Admissions. He takes up his appointment on October 1. Dr Pitt succeeds Dr Geoffrey Templeman, vice-chancellor of the University of Kent, who has been chairman since August, 1964.

Research forum set up 'to ward off Whitehall'

A top-level forum comprising the heads of the five research councils—the NERC meetings—has been set up to maintain and preserve the freedom of the councils and ward off take-over attempts from White-

Contents

Don's testament

Don Cupitt, divinity lecturer and dean of Emmanuel College, Cambridge: "Young people still want to know what theology is. We try to tell them. Heaven knows what they make of it all". Don's diary, page 5

Social Science
David Walker talks to Cyril Smith who becomes secretary of the SSRC in October, page 7

Manpower planning
Guy Neave on the implications of a manpower planning approach to higher education: "Early specialization, not flagellation, is the English vice", page 9

Iran
Annabel Ferriman reports from Tehran where seven new universities will be established in two years, page 11

Polytechnics
Sir Toby Weaver argues for l.e.a. control of polytechnics; CLEA conference, page 2

Internavex
What future for Britain's largest audio-visual exhibition? Patricia Santinelli reports, page 6

Don's diary 5
US news 10
Overseas news 11
Letters 12
Noticeboard 14

Council of Local Education Authorities conference

Sir Toby Weaver. Mr Mulley. Lord James.

Don't give up polys, Sir Toby warns

by Mark Vaughan

Local education authorities were given a strong warning of the dire consequences of giving up responsibility for the polytechnics at last week's Council of Local Education Authorities conference in Cardiff.

Sir Toby Weaver, former deputy secretary for further and higher education and one of the architects of the binary system, said that if the polytechnics were too much for the L.e.a.s to handle, then so might the colleges of education and further education.

Some L.e.a.s gave this impression that if they could not keep the polytechnics under their close control then they were much better off without them — "to the relief, what is more, of the rates". If this was their attitude, then they and the institutions ran a double risk.

"If the impression were to gain ground that the local authorities were able and willing to administer the polytechnics and other institutions of higher education only repressively, if at all, where would the slippery slope end?".

L.e.a.s would soon find their responsibilities drastically reduced if their various further and higher educational institutions went their separate ways.

While education ministers had pledged themselves to principle to support the steady development of the polytechnics under the aegis of the L.e.a.s, it was not clear that the authorities or the polytechnics shared this enthusiasm.

The other risk, facing the institutions themselves, their staff and students, would be the loss of local connexions, support and concern which gave the polytechnics much of their vitality and significance. For the polytechnics to see their future as "self-governing corporations after the pattern of the universities" was to contemplate a mirage, Sir Toby said.

Possibly the best solution was the one recently given "a new and helpful focus" by CLEA—some sort of regional coordination. CLEA had proposed a piece of regional machinery with three aims: to devise and supervise arrangements for the induction and in-service training of teachers; to advise on regional plans for the distribution of teacher training courses between colleges; and to coordinate coherent patterns of what the 1972 White Paper called higher education supply, namely higher education courses, with which Regional Advisory Councils had been associated.

Sir Toby thought that the creation of such bodies would have many advantages. "It would leave each individual l.e.a. master in its own house but provide a context in which it could work out its contribution to a wider plan."

It would also help the DES build up a clearer picture of the needs and capacities of each region, would not upset the balance of different educational interests in the region, including those of the universities, and would enlarge the community of understanding between those concerned mainly with teacher training and higher education respectively.

Moreover, it would provide a constituency from which, if the need arose, a new or revised national body could be constituted.

"Experience shows that agreement to carefully considered proposals of the kind CLEA has made comes only with patient — but not protracted—negotiation and a spirit of give and take. To me a scheme on these lines offers a real chance to strengthen the partnership. I hope it will be pursued from all sides with vigour."

In a brief reference to the existing powers of the DES and the L.e.a.s under the 1944 Education Act, Sir Toby said he did not think a new Act was needed at the moment.

Sir Ashley Bramall, leader of the Inner London Education Authority, claimed that many authorities who agreed with Government policy on secondary reorganization for example, found it very difficult, if not impossible, to implement the policies, because of administrative difficulties. The same thing was happening in the field of teacher training.

"It must be due to faulty machinery or a fault in the law", he said.

'Fewer, better universities should be aim'

In a strong defence of the concept of elitism Lord James of Rusholme, told the conference he advocated a smaller number of universities of "really superb quality", within a variety of higher education institutions.

It was essential to have only a few to "blaze the way" for the future and to ensure that the "best" was passed on.

At the moment in further and higher education there was a multiplicity of institutions and courses, some of which attempted to give a fancy and spurious academic respectability. Many universities had also become too large.

If society was contemplating a great increase in higher education then it was not undemocratic to envisage "a hierarchy of institutions".

Lord James, former vice-chancellor of York University, said many people today questioned whether universities in any recognizable form could continue "in a world where elitism became a term of abuse". Intellectually, universities were elitist because a "comprehensive university" was a contradiction in terms.

The function of a university was not simply to respond to social needs, but to transform society. They were there not to give the system what it thought it wanted, "but what it ought to want".

However the pendulum had swung too far in the direction of research. "I don't want to denigrate genuine research, but the attitude that research, however trivial, is better than any teaching, however stimulating, is what I deplore."

Lord James was attacked by several delegates for what they said was an "elitist" approach to education. One from Mid-Glamorgan accused him of "educational fascism".

Mr Mulley's 2 per cent growth offer greeted with dismay

by Frances Gibb

Education expenditure in the future will have to be carefully planned with an eye to priorities, Mr Mulley, Secretary of State for Education and Science said.

The next two to three years might be a searching period for local government, but central government was also facing difficulties due to the nation's unwillingness to accept, until recently, that "inflation was growing at the fabric of our society".

It was totally unreasonable to suppose that public expenditure could continue to grow at a faster rate than the gross national product, or that education could be exempt from reductions in planned spending.

In spite of the £80m cut in education expenditure for 1976-77, local authority current expenditure for the same period would have a two per cent growth rate in real terms. However, it would be wise to assume, for planning purposes, that there would be little scope for growth in the next few years.

On priorities, Mr Mulley said it was clear that education for children of compulsory age had to be protected. Then there was the 16-19 period which for most children marked the transition from school to work.

In higher education, where the provision of staff and buildings had outstripped student demand in some areas, there was certainly room for further expansion of student numbers without substantial additional expenditure. This would mean a tightening in some staff student ratios.

He rather thought there should be more that it will not be possible to recruit teachers up to quota." He urged local authorities to advise him what priorities nursery education buildings and maintenance of school buildings should have.

Recent salary increases and improved pay structures had resulted in a marked reduction in teacher resignations, he said, but that meant newly qualified teachers had to look further afield for employment.

"In view of this I have thought it right to review the existing recommendation that 23,000 students should be admitted to one-graduate courses in September 1976 and I have asked for the views of the advisory committee on the supply and training of teachers on this."

Newly qualified teachers should be given top priority, he urged. They had entered higher education in the confident belief that there would be jobs for them. He asked local authorities to give advice on what provision should be made in the rate support grant settlement for 1976/77 for the employment of teachers.

A high level meeting was to be arranged for an exchange of information and views between the L.e.a.s and the Department of Education and Science.

● The two main local authority associations were expected to tell the DES this week of inevitable cuts in education services next year because of the 2 per cent growth rate announced by Mr Mulley.

The CLEA delegates left the conference unanimous in their belief that they needed 3 to 4 per cent growth simply to stand still next year. Mr Mulley was told that some authorities were thinking of sacking teachers.

It is hoped that the meeting this

Fewer graduates attracted to commerce and accountancy

by Sue Reid

Two universities have expressed concern over the number of graduates moving into jobs in commerce, accountancy and insurance. Kent and Dundee universities have highlighted this unusual trend in their annual careers' service reports on the destinations of 1974 graduates.

Kent University's appointment service pinpoints the reluctance of students to work in commerce or industry and claims there has been a sharp drop in the number of students attending interviews with firms which stage special visits to the campus.

The Kent report for 1973-74 outlines possible reasons for the lack of enthusiasm, including changing attitudes to a permanent career. Graduates, it says, should have the right to choose their own work but it was still worth asking if preconceived ideas about employment were preventing them from considering posts for which they were suited and would find satisfying.

Overall, 1974 was not a particularly bad year to be looking for employment says the report. Employers were asking for more graduates than in 1973 and their requirements were made known fairly early in the academic year. No fewer students had found employment although there was evidence to suggest that less applications were made by students than in the past.

At the time the report was compiled there was only restricted information available on the first destination of the 657 graduates in 1974. The destination of more than 100 students were unknown.

However, figures show that of the 550 students with known destinations more than 270 entered permanent employment in the United Kingdom while 39 took short term jobs; 22 were actively seeking employment and 15 were employed overseas.

More than 50 men opted for further academic work compared to 6 women but the teacher training figures showed that 46 men and 33 women had chosen this field.

Of the 103 graduates with higher degrees 41 were permanently employed, three had entered teacher training and 12 had opted for further academic work. Nine were employed overseas and a further 17 were overseas students who had returned home. The destinations of 10 were unknown.

Dundee University's output of graduates and diplomats in 1974 was higher than any previous year but figures showed the drop in numbers taking jobs in commerce, the report just published by the university's careers and appointments service says.

The university had 581 graduates in 1974 and granted 100 certificates or diplomas in social studies, education and social administration, but the noticeable trend to emerge from this total was the declining interest in commerce. Only 22 first degree graduates entered this field compared to 33 in 1973.

The number of Dundee graduates finding employment overseas rose substantially in 1974 from only 5 a year to 22. More graduates went into the engineering industry and legal professions than previously.

The report also notes a slight falling off in the numbers entering teacher training. But the total of 74 was still the highest for any year apart from 1973, when 84 students opted to become teachers.

In all, further full time study claimed 36.8 per cent of first degree graduates compared to 38 per cent in 1973 and 39 per cent in 1972. More graduates entered permanent employment in this country than in the previous three years but in percentage terms the amount was marginally lower than in 1973.

There was a drop in the number choosing to study mathematics and physics and a 20 per cent fall in engineering graduates in 1974, compared to the years prior to 1973.

Academic barriers block Welsh sixth form entry

by David Hencke

Schoolchildren could be discouraged from entering higher education by artificial barriers preventing them enrolling in the sixth forms of some Welsh comprehensive schools, says the National Union of Teachers.

A survey by NUT (Wales) shows that although many Welsh grammar schools have become comprehensive, academic barriers are preventing some children who would like to enter sixth forms from doing so.

Mr Ken Donovon, research officer for NUT (Wales), who compiled the report, says: "In some cases the implementation of comprehensive education has merely transferred the 11-plus to the 16-plus. The result is that 'late developers' are being excluded from some sixth forms and the pool of students who wish to enter higher education is reduced."

The survey also shows a growing preference for colleges of further education among fifth formers, particularly if they felt that transfer to a sixth form college or to the sixth form of a former grammar school would be restrictive.

"The staff of a designated 11 to 18 school with no sixth-form considered that the extremely high entry requirements needed for transfer to science courses in the sixth form of another school had acted adversely on their students", it says.

The refusal of the receiving school to accept grade 1 CSE chemistry as a qualification for A level work, thus causing some able students to change their objectives on transfer, had resulted in the wiser students moving to colleges of further education.

Qualifications for Entry into Sixth Forms in Secondary Schools in Wales. Published by the NUT Wales, 34 Queen Street, Cardiff CF1 4BW.

Gwent offers DipHE

The first Diploma of Higher Education course in Wales has been launched by Gwent College of

Lecture course 'boosts Marxist studies'

by David Walker

A week of seminars and lectures, organized by the Communist Party ended last Sunday after giving what the organizers hoped was a big boost to Marxist studies in universities and polytechnics.

One of the organizers of the eighth Communist University of London, Mr Jon Bloomfield, the student officer of the Communist Party, said a junior minister during the week was to make Marxism harder to ignore and to be dismissed by those teachers who presented it in a grudging or even hostile way.

The programme, held at the University of London union, attracted over 730 students who heard lectures by Professor Brian Simon, of Leicester University, Professor Rodney Hilton, of Birmingham University, Professor Victor Allen, of Leeds University, and talks by a number of other academics and authors.

Mr Bloomfield, a former research student at Cambridge University, explained that the event was not restricted to members of the Communist Party. The participation of members of other socialist groups showed, he said, the wide basis of Marxist ideas among students. He hoped it would be possible to organize similar weekend seminars outside London during the year.

The course, now an annual event, was organized around central lectures in history, education, philosophy and literature, with general lectures on Marxist ideology and revolutionary strategy and tactics. A popular element was the series on women and society.

One of the organizers, Mr Martin Jacques, a lecturer at Bristol University, said the course wanted to challenge the orthodoxy of the academic disciplines.

"It challenges conventional boundaries, too" he said. "The perspective can be followed across art and design, literature, and architecture as well as economics and politics", he said.

The bulk of students attending the course, which cost £5, were from universities in Britain though there was a fair representation from the

State gets 'best value' from Bath and Durham

Universities in Britain are receiving an average grant of £1,541 for each full-time student, according to a recent answer in parliament from Mr Mulley, Secretary of State for Education and Science.

The three universities with the lowest grant per student—the cheapest for the taxpayer—were Bath, Durham and Exeter. Excluding London, the most expensive were Liverpool, Dundee and the University of Manchester Institute of Science and Technology.

Both Bath and Durham explained this week that one reason for their low student costs was that they had achieved their student targets, did not have vacant places, and that maintenance costs per student were therefore lower.

Sir Derman Christopherson, vice-chancellor of Durham, said that so far the University Grants Committee, in drawing up supplementary grants, did not appear to have taken actual instead of estimated student targets into account, although there had been assurances of fairer treatment in the future.

Another question to the Secretary of State for Scotland, showed that the average net recurrent expenditure per full-time equivalent student in the Scottish central institutions—the polytechnics of Scotland — was £1,065.

The costs per student were:

ANNUAL COST PER STUDENT

	£
Bath	1,160
Durham	1,262
Exeter	1,238
York	1,311
St Andrews	1,348
Lancaster	1,350
Oxford	1,360
Strathclyde	1,376
Cambridge	1,399
Gen Applin	1,399
Warwick	1,399
Keele	1,399
Hull	1,364
Loughborough	1,366
Sussex	1,371
Leicester	1,398
Reading	1,403
Heriot-Watt	1,434
Nottingham	1,438
Essex	1,462
Wales	1,465
Leeds	1,466
Stirling	1,467
Glasgow	1,468
Aberdeen	1,469
Brunel	1,470
Birmingham	1,481
Bristol	1,484
Southampton	1,495
Aston	1,502
Salford	1,506
Sussex	1,508
Manchester	1,517
Glasgow	1,528
Newcastle	1,545
Aberdeen	1,701
Surrey	1,712
Oxford	1,735
Birmingham	1,861
Liverpool	1,896
Brunel	1,906
Dundee	2,064
UMIST	2,089
Salford	2,130
London	2,402
Total England	1,541
Aberystwyth	2,397
Bangor	2,327
Cardiff	2,305
Lampeter	2,147
Swansea	2,027
Welsh National School of Medicine	490
University of Manchester Institute of Science and Technology	2,091
Total Wales	13,280
Total England and Wales	1,649,783
Aberdeen	4,776
Edinburgh	2,540
Glasgow	2,127
Heriot-Watt	2,064
St Andrews	2,031
Stirling	1,880
Strathclyde	4,985
Total Scotland	34,964
Total Great Britain	904,717

Mr Mulley said in another reply that the provisional numbers of full-time undergraduates and postgraduate students in universities in October 1974, as recorded by the UGC, were given in the following table. No figures were yet available for part-time students.

PROVISIONAL AUTUMN ENROLMENT OF FULL-TIME STUDENTS, OCTOBER 1974

	Undergraduates	Postgraduates	Total
Universities			
Aston	3,317	816	4,133
Bath	2,598	595	3,193
Birmingham	5,629	1,709	7,338
Bradford	3,193	626	3,819
Bristol	5,477	1,435	6,912
Brunel	1,935	377	2,312
Cambridge	10,931	2,011	12,942
City	1,848	504	2,352
Durham	3,216	898	4,114
East Anglia	2,988	500	3,488
Essex	2,127	574	2,701
Exeter	3,136	655	3,791
Hull	3,470	990	4,460
Keele	1,969	314	2,283
Kent	3,227	1,044	4,271
Lancaster	2,861	353	3,214
Leeds	7,934	1,902	9,836
Leicester	2,533	1,063	3,596
Liverpool	8,939	1,074	9,103
London (Graduate School of Business Studies	—	189	189
London University	25,725	9,867	35,592
Loughborough	2,934	341	3,275
Manchester School of Business Studies	—	121	121
Manchester	8,162	1,612	9,774
University of Manchester Institute of Science and Technology	2,341	1,036	3,377
Newcastle	6,126	1,113	7,239
Nottingham	4,743	1,600	6,343
Oxford	9,110	2,001	11,111
Reading	4,066	1,066	5,132
Salford	3,395	1,366	4,761
Sheffield	6,648	1,207	7,855
Southampton	6,026	1,075	7,097
Surrey	2,307	403	2,710
Sussex	3,537	1,060	4,597
Warwick	2,934	367	3,301
York	2,204	486	2,690
Total England	196,175	39,372	196,845
Aberystwyth	2,397	538	2,935
Bangor	2,327	948	3,275
Cardiff	4,305	892	4,985
Lampeter	347	24	371
Swansea	2,627	560	3,187
Welsh National School of Medicine	490	46	544
University of Manchester Institute of Science and Technology	2,091	245	2,336
Total Wales	13,280	3,261	16,241
Total England and Wales	169,783	42,633	212,416
Aberdeen	4,776	726	5,502
Edinburgh	2,540	1,207	3,747
Glasgow	2,127	784	2,911
Heriot-Watt	2,064	248	2,312
St Andrews	2,031	245	2,276
Stirling	1,880	157	2,037
Strathclyde	4,985	550	5,535
Total Scotland	34,964	4,616	39,320
Total Great Britain	204,717	46,982	251,706

Take heart from 17th Century, says Sir Bernard

Scientists facing problems in research funding should take heart from the achievements of their colleagues 300 years ago who faced similar opposition and hostility, Professor Sir Bernard Lovell, director of Jodrell Bank Radio Astronomy Laboratory, said last week.

Preaching at a service in Westminster Abbey marking the tercentenary of the Royal Greenwich Observatory, Sir Bernard said that contemporary scientists were almost overwhelmed by practical problems and it was easy to reflect on the seventeenth century as one of the great periods in English history.

"But we should take courage from the remarkable fact that the talents of our predecessors survived the horrors of the civil war, the plague and the great fire", he said.

The group that founded the Royal Society faced withering criticism from a community which could not understand the point of their activities in natural philosophy.

Sir Bernard is this year's president of the British Association for the Advancement of Science and will be delivering his presidential address to the association's annual conference next month.

He said that despite astonishing advances since the observatory opened in 1675 we still did not know how the solar system originated. Successive attempts to find an explanation of the universe in acceptable scientific terms have not yet succeeded.

"It is right and proper that we should struggle with the great problems that confront us when we inquire into the fundamental nature of the universe.

"At the same time we should not be surprised. If we cannot find a uniquely acceptable scientific solution for events which have forever

New guide shows who wants what A levels

The A-level grades asked of student applicants to 74 universities and polytechnics are disclosed for the first time today in a guide aimed at helping 125,000 school leavers choose their degree courses.

The guide, Degree Course Offers 1975 by Mr Brian Heap, offers advice to applicants on how to apply to university and includes comparative tables of A-level grades asked by universities and polytechnics for similar courses.

Mr Heap says: "There is very strong evidence to suggest that ill-motivated applications are more likely to come from candidates who fail to recognize the full implications of the admissions procedures and the realistic levels of entry required for degree courses than from those who are attempting to 'play the system' for motives other than academic ones."

A typical entry in the book is the section covering biological sciences. That reads: "A fairly distinctive pattern of offers seems to emerge in this subject, headed by Edinburgh, Leicester, Southampton and Sussex, with offers of CCD. Birmingham, Lancaster, London (Royal Holloway), York and Bangor are a point lower with CDD, then come Aston, with CDE or CC, and East Anglia with DDD. Portsmouth Polytechnic at DD is higher than most other polytechnics."

The guide also advises candidates on orders of preference in applying for courses and on "the strategy of planning their applications."

Degree Course Offers 1975: Your Place at University and Polytechnic by Brian Heap. Published by Career Consultants Ltd, 20 Foubert's Place,

College redundancy terms settled

by David Hencke

Lecturers who lose their jobs as a result of the colleges of education reorganization will be able to claim between one twelfth and two thirds of their salary under long-term compensation terms laid before Parliament by the Government last week.

The new terms, which come into force on August 1, will safeguard all lecturers, technicians and clerical staff under the terms of the Crombie Code, which has previously only applied to local authority and national health staff.

Under the scheme any of the staff from the college principal to the caretaker will be eligible for some form of compensation if he or she loses a job as a direct result of the Government's policy outlined in Circular 7/73 and the White Paper *A Framework for Expansion*.

The cost of the scheme is to be borne by the Government, who will make allowance in the local authority rate support grant for payment or pay directly in the case of any lecturer being declared redundant in a voluntary college.

The terms are complicated, but are basically as follows:

Lecturers or non-teaching staff who are offered jobs in a local authority when they are made redundant are entitled to full safeguarding of their salary. This will allow a lecturer to take a post in a school and still retain his lecturer's salary. Should he obtain a higher paid job or one of similar salary this will not apply.

Should a lecturer not be offered a job, and provided he has held a full-time post in an institution for two years he is entitled to compensation which can be resettlement, long-term or retirement compensation.

He can claim resettlement compensation if he has no suitable job after being declared redundant. He will be paid a lump sum, which, depending on service, will vary between 13 and 26 weeks of his annual salary. Redundancy payments normally paid by the Government will be deducted from this sum.

Should he still be unable to find a job, he can apply for long-term compensation, which will allow him to receive a weekly wage based on a sum between one twelfth and two-thirds of existing salary.

Should he have worked in Government service, which includes local authority and social service work, prior to taking up a college appointment, this will count towards his compensation. Lecturers who entered colleges from private industry are not eligible to count previous service. Once a lecturer reaches 55 his payments will be indexed to cover inflation.

Lecturers at retirement age can be offered retirement compensation, which will also depend on their years of service with the college. In special circumstances, lecturers below this age can also be offered retirement compensation.

The whole scheme is to be run from the Department of Education and Science's pensions branch, based at Mowden Hall, Darlington. College of education lecturers employed at voluntary institutions are advised to claim direct.

The Government has provided for appeals to an industrial tribunal should a lecturer be dissatisfied with the terms of compensation. Local authorities are being strongly urged by the DES to inform all lecturers of their right of appeal.

Statutory Instruments 1975. No 1092. *The Colleges of Education (Compensation) Regulations* 1975. Price 65p and obtainable from Her Majesty's Stationery Offices.

Year's delay for proposed London Bill

by Laura Kaufman

The University of London's senate voted last Wednesday for a year's delay before the university submits a private Bill to Parliament enabling it to change its constitution and make major reforms.

The main changes would be to make the vice-chancellor the full-time salaried, academic and administrative head of the university with the principal, as senior administrative officer, responsible to him.

At the meeting a crucial recommendation that the senate should give further consideration to the proposed arrangements for depositing the Bill by November 27 was amended by Professor Ralf Dahrendorf, director of the London School of Economics, seconded by Dr J. N. Black, principal of Bedford College, to delete the autumn deadline and allow more time for the comments of the schools' governing bodies.

This amendment was carried by a large majority on a show of hands.

The original recommendation, from the university's consultative committee, recommended that the draft Bill should be received and circulated to appropriate university bodies and to the schools seeking the comments of their governing bodies.

It added that the senate should give further consideration to the proposed arrangements for depositing the Bill by November 27 in the light of the views of the consultative committee. Professor Dahrendorf's amendment secures a year's delay to allow more time for the schools' comments.

During the half-hour debate, Sir Douglas Logan, the university's principal, explained why the Bill had to be presented in November —the only date when private Bills can be submitted—and the likely effect of a year's delay.

Sir Brian Flowers, Rector of Imperial College, said there was misapprehension about the aims of the Bill and that more time was needed to study it.

The consultative committee also laid before senate a third report summing up comments on its second report, and which showed a large measure of consensus for the aims of the Bill, according to Mr Peter Griffiths, the secretary.

Half the colleges had made no comment and half, including Imperial and University College with certain reservations, had been in favour, but the London School of Economics had suggested that the powers of the Joint Committee for Collective Planning—the central planning unit—should not be extended, and that the draft Bill should not go forward at this time.

The third report, Mr Griffiths said, made clear that there was no intention that the JCCP should have any executive powers.

It was decided to set up a committee to propose to the senate revisions of the existing statutes of the university in accordance with the proposals in the consultative committee's second report as amended

Dual support scheme in jeopardy, MRC warns

by Alan Cane

Financial difficulties in the universities are jeopardizing the survival of the dual support system of research funding, and the Medical Research Council fears there may be a shortage of trained biomedical researchers in the 1980s.

In its annual report, published this week, the MRC warns that concerted action is needed now from all authorities involved in university research, and points to significant changes in its own traditional pattern of support for biomedical research in the universities.

The new developments include:

● A £1.5m a year capital development programme for the construction of MRC research buildings on university campuses.

● A new, more stable but more inflexible career structure for MRC research scientists.

● The possibility of a switch of funds from long-term programme grants to short-term project research grants.

The report makes clear the MRC's commitment to supporting research in the universities. It says: "It seems unlikely that the fortunes of the universities will improve markedly in the foreseeable future but the council, which is now investing more money in university research than ever before, is determined that if its own allocation of funds permits, its support of research in universities should continue to grow, although there may have to be some change of emphasis in the method of support."

This is taken to mean that money originally destined for long-term programme grants—which last five years and are renewable for a further five—may be diverted towards project grants lasting only three years and involving no commitments to the research workers.

It goes on: "The council plans that its contribution to the dual support of university research shall have the same growth rate as the council's own budget."

It is clear from the report how seriously financial stringency is affecting the university side of the dual support system. In this system the university provides the floor of support from its University Grants Committee funds, while the research council provides money for research staff and equipment.

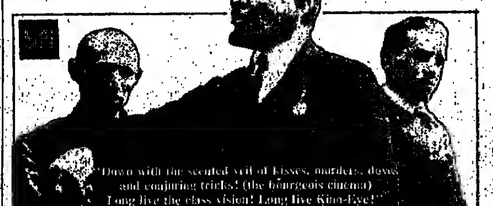
The report says: "The understandable but most regrettable tendency in the present situation is the declining ability of the universities to make their contribution in the dual support of research in partnership with the council." One indication of this is the declining number of research groups.

The MRC also points to the serious career problems in the university for the committed researcher.

The council has approved a new career structure for the scientists staffing its own units which means there will be a smaller number of scientists but they will be chiefly permanent.

The council spent its entire income of £36.293m in 1974-75; although its parliamentary grant-in-aid rose by 18.6 per cent in money terms between 1973-74 and 1974-75, the change in terms of constant prices was minus 0.3 per cent.

The Department of Health and Social Security and other government departments took up the full £5.553m transferred under the Rothschild arrangements in commissioned research. Government departments in fact contributed a total of £7.497m.



Down with the scented veil of kisses, murders, dows and conjuring tricks! (the bourgeois cinema)
Long live the class vision! Long live Kino-Eye!"

So wrote Dziga Vertov in 1924 contributing to the explosion of unprecedented film theory and practice which characterized post-revolutionary Russia. The materials for exploring these debates exist in the BFI.

● Films, including *Strike, Mother, Earth, Turksib, Man with a Movie Camera* and film extracts from the BFI Distribution Library. 17/23 Lower Marsh, London SE1.

● Books and Periodicals from the BFI Book Library, 81 Dean Street, London, W1.

● Advice on course construction from the BFI Educational Advisory

30,000 technology and science places vacant

by David Hencke

A nationwide effort to fill the 30,000 empty science and technology places in Britain's universities and polytechnics was demanded by Mr Keith Durrands, rector of Huddersfield Polytechnic, at the launching of Project—Engineers and Technologists for Tomorrow (PETT) at the Confederation of British Industry last week.

Mr Durrands warned that the country was desperately short of engineers and technologists. He suggested that a new five year sandwich degree, adoption of the French system of *Grandes Ecoles* and a higher grant could attract more science and technology students.

He also suggested more collaboration between polytechnics and schools on joint projects and a greater interchange by the civil service and industry.

Mr Durrands was highly critical of the type of higher education engineering courses available in universities. " Our university courses are designed in the main to produce excellent analysers who have an important role to play provided they are a part of a team which contains equally competent synthesizers—men and women who can innovate and create.

" Although the highly analytical courses are very demanding, and indeed do produce scholars, at the same time they do perhaps inhibit many students and prevent them from developing their creative talents

Mr Durrands said polytechnic courses tended to be more relevant than university courses and in engineering and technology this implied that there should be more of a balance between university and polytechnic students.

" Currently, the balance is very much in favour of the universities. Perhaps this is why the balance of graduates is so heavily weighted towards research and development. Perhaps, too, this is why our innovation and market performance do not always match our inventiveness."

Professor John Coales, chairman of the Council of Engineering Institutions, warned that the current position in schools and universities was " really frightening ".

" We have barely enough engineers and technologists to maintain our economy at the present level and the number opting for science and mathematics in the schools is dwindling rapidly."

Arthritis project at Leeds

Leeds University is launching a research project on the handicaps of arthritis sufferers to find ways of improving their living conditions.

Researchers will interview about 120 sufferers and try to discover how much it restricts them from carrying out normal activities, such as shopping, meeting friends, taking children to school and using recreational and community facilities.

The project will be conducted under Dr Anne Chamberlain, consultant physician in rehabilitation medicine at Leeds General Infirmary and a rheumatologist at Leeds University, and Mrs Jean Buchanan, a specialist on town planning who lectures at Imperial College, London.

The research, which is being supported by a grant of £4,700 from the Arthritis and Rheumatism Research Council, will make recommendations on how design and siting of communal buildings can be improved for the 900,000 sufferers of arthritis in Britain.

Place your call to OU 'phone tuition

by Jane Feinmann

Teleconferencing, a past office service whereby several people can take part in a telephone conversation, is likely to add a new dimension to tutorial teaching in the Open University over the next few years.

The Bell Telephone Company, in the United States originally pioneered the system, along with numerous audio-visual sophistications, so that executives in national and international corporations could cut down on business trips, a seminar at University College London on telephone conferencing heard last Friday.

Mr Ben Turok, a senior counsellor in the OU, said that telephone tutorials are cheap and from the students' point of view a highly acceptable solution to what has became an increasing problem in the OU. As students graduate to more advanced and varied courses they are being asked to travel increased distances to attend tutorials. The problem is exacerbated where students live in remote or inaccessible places.

In London over 100 students, divided into 20 groups are now having fortnightly telephone tutorials on STD calls.

The procedure is relatively straightforward. The tutor identifies the student who needs help at home and he contacts the regional head office. There the " disadvantaged " students are divided into groups of five or six and assigned a tutor.

The Post Office is informed in advance of the planned tutorials and the student is told by the OU of the time and date of his tutorial. All being well, his telephone rings at the appointed time, and the operator asks him to hold for his conference call.

Mr Turok says the beauty of the system is that it is cheap. STD tutorials in London cost £1 per hour—£3 in Scotland because trunk calls are used.

On the 'phone for tutorials.

There was considerable resistance within the OU to the innovation. It was believed that the small face-to-face seminar was the best way of teaching and should be retained at whatever cost. Mr Turok agrees but says that reality has to be faced. There was also considerable scepticism as to whether the new system would work, both in human and technological terms.

He admits the critics have a point. The device most commonly used was not designed specifically for tutorials—the volume is inadequate, often resulting in disastrously clipped speech.

In fact, most students have reacted well to the new system, if only because they are highly motivated to do so. " Students who are prepared to adapt to TV lessons to get a degree are also likely to be prepared to adapt to telephone tutorials ", Mr Turok says.

A serious deficiency is the lack of a visual component. The OU has already designed a dotapad which could be supplied to students throughout the country. Research is currently being carried out to develop a practical and inexpensive version which, it is hoped, will be available in about two years.

Capitalize on assets says Aston v-c

by Alan Cane

With Britain short of money it made no sense to establish expensive new institutions when universities such as Aston in Birmingham could do the job at minimal capital cost through the development of existing activities, Dr J. A. Pope, Aston's vice-chancellor wrote in his annual report, published last week.

He emphasized that demand for student places at Aston was showing no decline, and in fact the university might exceed the target set by the University Grants Committee.

He wrote: "The applications received to date are some 20 per cent up on the number received at the corresponding date last year. In many cases the increase in student numbers achieved by the university is against the national trend, especially in the field of engineering. If the student numbers continue to increase at this rate, then we shall exceed by some 500 the student target numbers for 1976/77 provided for by the UGC. The total student numbers will then be 4,503 full-time equivalents."

Dr Pope says he believes the university should remain for three to five years with a student population of 5,000 to allow consolidation, but he warns that the growth of the university would be seriously distorted if numbers were kept for below this figure.

Dr Pope, writing before the 1975/76 university grants figure was announced earlier this year, said that the university had no cash reserves to offset a possible deficit and had large overdrafts from two banks used to finance residential projects.

He went on to say: "With the ever increasing costs of university overheads, the only way that the university can possibly remain economically solvent is by increasing student numbers in the following quinquennium, provided the university receives a proportionate increase in income."

Times Cassettes: "a valuable and interesting library."

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TIMES CASSETTES

Don's diary

Tourist trap

Six weeks ago we were talking ourselves into a new Ice Age, and the Gulf Stream was taking a right turn. Now Cambridge lies dazed in the sun, mumbling about the parched grass. It is not quite as peaceful as it seems, though, for bursars have been hard hit by inflation, and are busy nursing the conference trade to help make ends meet. Every few days a different crowd of faces comes drifting around, with labels under them.

What are they all talking about, and where's the money coming from? It is said there is some consumer resistance: I read of a horrified businessman complaining that in his experience some of the colleges at Oxford and Cambridge were "absolutely mediaeval". To protect such tender susceptibilities the conferences are usually put in the new blocks, which have the twin advantages of looking like everywhere else and adequate sanitation.

But here's that feeling of being under observation again. This is a ground-floor room in a tourist trap, and inquisitive eyes are peering through the window. Sometimes porties of people walk into the room and look around wonderingly. It's like being in a zoo.

Most colleges reckon they are doing quite enough by remaining open free of charge, but I feel sorry for the tourists and wish we did more in help them. They look so hard, and see so little, for the local fauna are secretive.

Misquotation

I've just read something about the allegedly fixed social order of the past, which quoted the Catechism on "doing my duty in that station of life into which it has pleased God to call me". Hypersensitivity to misquotation is a damish failing, but I surely meet that one three or four times a year.

The Catechism says, "that state of life unto which it *shall* please God to call me", for the Church of England always believed in social mobility. Hence all those scholarships: meritocratic, maybe, but scarcely feudal.

Why the invariable misquotation? As in the case of the regiment of women, people get it wrong for a reason, surely?

Points of view

In a dream for three or four days, waiting for a chapter to take shape, something to do with scientific and religious ideas of objectivity. Monod says only scientific knowledge is objective knowledge. Yet what could be more "objective" than Aquinas's temper of mind?

Before the Renaissance, few people worry about how the world looks different in different perspectives, from different points of view. But in modern thought, the world is a system of points of view.

Leibniz. Making maps by triangulation. You can't make a good map from one point of view, but if you coordinate measurements made from several points of view, hey presto! —"objectivity", out of a network of relations. Appearance and reality, my world and our world.

If the world is a system of points of view, is God still needed to ordain the whole, as Berkeley and Leibniz thought? And what have we all done in all this: swapped the God's-eye view of the world for the collective public view of society? What makes the latter more "objective" than the former?

It's not coming out, and I shall be dreaming (with interruptions) for a day or two yet. I wish I knew a euphemism for the pangs of conscience which many people still feel when instructed to hurt or kill their fellow men. Harmless enough in most people, this weakness is a serious handicap to soldiers and secret service agents in their work, so techniques are being developed and applied to reduce it. Will anybody connect the two stories?

Perhaps I am getting back in my dreaming again. In a world in which Society has taken the place of God, and "social responsibility" the place of conscience, then the group must be objectively right and the individual must be wrong.

Don't we all increasingly accept the propriety of manipulation? Every time we reject "muralising" and "preaching", and ask instead for causal inquiry into techniques for solving a social problem, we are taking the process a stage further.

Every issue that comes up, from wife-beating to football hooliganism, from racialism to obesity, is nowadays handled this way. We're on our knees, begging to be manipulated, provided only that we are manipulated in the directions most of us think we should be manipulated. After all, this is the free world, isn't it? We're sturdy democrats, aren't we?

Royal glimpse

A few years ago a Royal person visited a college here, and the idea was that she should be given some informal glimpses of what people actually did to earn their bread. It was easy enough to arrange for a scientist to seem to be doing something useful and scientific, but what about the arts? Some unfortunate individual was persuaded to put on cap and gown, and sit at a desk appearing to read Donne. That is what we call "research", ma'am.

As public debate in this country appears to be getting more and more confined to discussing methods of lubricating and speeding up the mighty treadmill of production and consumption, it gets harder and harder to justify ourselves.

Stress pangs

In the newspaper there is yet another protest article about the confinement of political dissidents in psychiatric institutions in the USSR. Elsewhere in the same paper there is an article about the use of psychological techniques in the West to reduce stress.

Stress, it appears, is here used as some effective way of thinking, like Descartes meditating in bed (and even that only briefly, or so he claims).

Meanwhile, off to water the seedlings and wait for ideas. Come to think of it, didn't Russell use sleep to solve his problems? No, I've tried that. Russell programmed his brain, went off to sleep, and woke with the answer. I mentally set out the question, and then merely failed to sleep. And now there are watering restrictions.

Theology is . . .

A pile of letters, do this, do that. Then a day conference for sixth-formers, thinking about reading theology. Touting for custom, you might think, but in fact we are not short on numbers. Growing, if anything, with a surprising number of agnostics reading the subject, as well as a large body of strong conservatives. These latter are radicals of a sort here, I think, in other faculties, and their often vocal criticism of what they hear poses some pretty problems for lecturers and supervisors.

Meanwhile, the young people want to know what theology is. We try to tell them. Heaven knows what they make of it all. Is it about everything, or nothing? But they keep coming, we are still in business, and I say it's about everything.

Don Cupitt

The author is Dean of Emmanuel College, Cambridge, and a lecturer in divinity.

The buffoons of blind bureaucracy

ERIC E. ROBINSON

I have just listened on the radio to a buffoon from some government department explaining solemnly that, despite the impression that ignorant people such as you and I might form, it is quite reasonable that some farmers are pouring good fresh milk down the drains. He said that some EEC rules demanded it and, anyway, a thousand gallons of milk was not as much as it sounded.

The most disagreeable feature of the broadcast was that the interviewer spoke to him as though he were a normal human being. It continued with a female affiliate explaining that she had to have sex tests in every country she visited because none would recognize the others' certificates. All this in the name of maintaining standards. It started me thinking about educational administration and I switched off.

I am becoming really frightened of blind bureaucracy, perhaps because of its creatures as the system draws me in. Today I had a letter from a respected academic colleague evading a moral issue by quoting regulations and established procedures.

My distaste was more than doubled by the quick realization that I had just written a similarly evasive letter of my own. Is this the evil in education that I sense it to be or am I being oversensitive or even sanctimonious?

Every time a waitress or a shop assistant tells me that "we cannot serve this with that" when she means "we will not serve this with that" I feel a sense of outrage at her, albeit unconscious, dishonesty and evasion of responsibility. That those around me accept this quietly I find even more disturbing.

One of my favourite bits of law is that under the Race Relations Acts it is no defence to hide behind the racial prejudice of others. The Nuremberg trials established the principle that obedience to others was no defence against criminal charges and revealed some of the worst war criminals as timid pen-pushers merely signing orders in accordance with established procedures and routine instructions.

I wish this principle could be extended to the petty criminality and to many more aspects of foolish and stupid behaviour of jocks in office. How much cleaner and pleasanter our lives would be if post office managers could be held personally accountable for the follies they commit in the name of their faceless masters. What a joy, and indeed what a shock, it would be to find the general manager of London airport proudly parading in the departure lounge in his top hat like a stationmaster of old.

Last week there was much speculation in Bradford College about the purpose of a glass sentry box we have erected near the main entrance. I do not know what it is for but I know it should be for me to sit there regularly on public display as the man who is paid to carry the blame.

I feel sure it will not happen because no one could take it seriously. Everyone would walk past and continue to complain about "them" or "him". One of the greatest problems of our democracy is the widespread feeling of hopeless impotence of those confronted by a seemingly impregnable and imperturbable machine. This is the mood of many students.

A lot of academics are worried about the politicization of colleges and universities in consequence of the revolt of students and junior staff that reached a climax some years ago. My worry is not about its success but about the consequences of its failure.

It is a blow to democracy that the great extension of student and staff participation seems to have made little impact on academic procedures and policies. In spite of all the fuss about secret files the administrative machines have not been dented and I rather regret it.

Among the young, not least in higher education, there is a feeling of disillusionment and cynicism about democratic procedure based on a belief that the controlling bureaucrats will always work the system, and retain control; that nothing decided in committees will affect anything that really matters.

It is publicly reinforced by such revelations as those of Watergate and the Crossman diaries. It provides a rationale for such expressions of despair as those of the Angry Brigade and the Essex bombers.

When one of this country's leading authorities on civil disorder commented to me a few years ago that the courtyard of the University of Lancaster was nicely designed because it was easy to spot and control with a couple of machine guns or a canister of gas, I was amused by his wit.

Quite recently his remark has been haunting me. Fantasies? Certainly. But remote and incredible fantasies have during this century only too often become nightmare realities. When I read a report of the ringleaders of student militancy I cannot laugh it off as smart talk. It has actually been perpetrated within western democracy very recently.

The current student troubles attract less publicity than those of a few years ago and there is diminishing public sympathy for the militants. Positions are hardening on both sides and there is a growing contempt for normal process. The situation at Lancaster may be more dangerous than we realize especially if either side is allowed a victory.

Noel Annan is completely out of touch if he thinks that sermons advocating a return to traditional academic relationships will serve any useful purpose. He should have learnt from his excursion to Essex that this can only aggravate the situation.

The old are excessively impressed by the preciousness of the young. They fail to perceive and much less to comprehend the idealism, the insecurity and the despair that motivates many of our hard faced sons and daughters. Higher education and indeed our whole community, desperately needs leaders of mature personality who genuinely like young people and who will strive to share their hopes, their problems and their agonies.

There is no substitute for sheer humanity, sentimental though it may sound. By this I mean an awareness of and a concern for what is happening to people. It is always possible to score a point in a conference or higher education by commenting that nobody has mentioned students.

Within the hierarchies of higher education preoccupation with "bigger" issues than the experience of students is only too easy. A useful discipline in any academic committee is to keep asking what effect our decisions will have on what actually happens to students.

And surely it is never sufficient, when a decision is challenged to reply that all the regulations have been satisfied and all the rules obeyed.

I have a letter in front of me that decision to fail a student and adds, for good measure, that the decision went through five committees. Five, for God's sake, so how could it be wrong? I feel inclined to argue that if it needs the defensive mechanism of five committees the decision is unlikely to be right.

A young man for whom I bear some professional responsibility has had his future blighted by a mischance which has plunged him between the cogs of an academic examining machine. When I enquired about the prospects of a humane consideration of his situation, I was first damned for my impertinence and then formally told that the machine had worked smoothly to crush him.

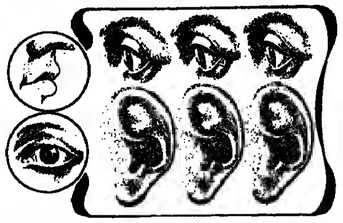
It may be that men of some humanity did sympathetically consider his case, but the machine will not demean itself by admitting this to me or to him. We are entitled to know only that the machine has worked according to rule, as if we didn't know that. Hard cases make bad law, but bad law also makes hard cases.

I am not infrequently criticized for advocating the abandonment of established academic connexions and procedures by the colleges of education. I have been accused of carelessly discounting the essential humanity of the colleges in engaging them in the alleged inhumanity of the technical college world.

But the more I see of the mindless formalism of some of the well entrenched academic authorities under which the colleges have been compelled to work in the past the better I understand their willingness to break away. If we cannot guarantee them something more humane than this I hope we will have the decency to slink away.

Jo Grimond last weekend made a timely appeal for universities to reexamine what they are about and suggested that in consequence of this one or two might close down. A moderate suggestion? as befits a liberal. If colleges and universities are not first and foremost humane in their concerns, we might as well

End of the independent road for Internavex?



Internavex, one of the largest and most successful international audio-visual exhibitions and conferences, is dying according to rumours circulating among exhibitors.

In the edgy atmosphere of Internavex 1975, held at Olympia this month, exhibitors admitted that they had lost confidence in the event.

"Next year it will be a completely different event which will not suit our purposes", they said. However, some believe it should be held biennially.

These gloomy predictions have emerged mainly because next year Internavex is giving up its independence to become only one of eight exhibitions and five conferences held under the aegis of Caxton 76, a festival to mark the quincentenary of the first book printed in Britain and to present a complete survey of the communications world.

Another important reason was the amount of empty space at this year's exhibition—the absence of large companies like Bell and Howell was strongly felt. In addition, unlike last year, no educational institutions were represented. In 1974 this had proved a strong attraction and both visitors and exhibitors this year were disappointed by their absence.

One other drawback was the separation of the conference from the exhibition. This year it was held at Whitelands College, Putney, and in spite of free transport between the college and Olympia, exhibitors felt that many delegates either did not come to the exhibition or spent very little time there.

Companies who sell solely to the education sector have been particularly affected. Mr Friedel of R. W. Friedel and Co Ltd, who manufacture language laboratories, said they had lost potential customers.

"As far as my company is concerned we will not attend Internavex next year, and I have put it down in writing to the organizers", Mr Friedel added. "It would be a dead loss to exhibit, since it is mainly a printing exhibition; we can get more business and generate more interest by sending staff round the country."

He said that several of his competitors agreed with him, especially since it would be so much more expensive next year; he estimated costs would rise by 100 per cent.

However, the sponsors of Internavex, the National Committee for Audio-Visual Aids in Education, a body which disseminates information, advice and training in audio-visual matters to schools, colleges, polytechnics and universities, does not appear too worried by these prospects.

"If this is what the exhibitors are saying, then they have got it all wrong", Mr Marchant, the director of NCAVAE pointed out. "As far as I am concerned Internavex next year will be a much bigger event." Mr Marchant will be president of Caxton 76.

"I may consider holding the exhibition every two years, but I am not being pressurized into this; I have made no decision as yet."

Brintex Exhibitions Ltd, employed by NCAVAE to organize the exhibition, said that the empty space was a reflection of hard economic times and not the death knell of Internavex. It is true that the drop in attendance figures has been small. Last year 11,687 attended. The available figure for 1975 is 10,905.

However, Mr John Northover, who organized last year's exhibition and who is now managing director of Aveley/Cybarvox, one of the exhibitors, confirmed that there was a general feeling among exhibitors that Internavex would not continue to exist in its present form.

Discussing the future of exhibitions generally Mr Northover said that all were declining in size and that it was foolish for any organizers to think that they could be bypassed by expenditure cuts. Current severe cutbacks in education expenditure, for example, are an added reason for some not to bother about attending exhibitions. For a successful exhibition, at least six big companies had to be attracted and then all the smaller ones would follow, a point echoed by Gordon Audio-Visual, who had a very successful exhibition.

One big manufacturer unlikely to be exhibiting next year is Sony. "It is a great pity because we found the quality of the enquiries at the exhibition much higher than in other years, but we do not see the point of a video manufacturer exhibiting at a printing exhibition and therefore we are looking for a video fair to show at in 1976", a spokesman said.

Among exhibitors who favoured a biennial exhibition were Elite Optics Ltd, although business at this exhibition had been excellent.

However, delegates at the three-day residential conference struck a far more cheerful note. On the whole they did not think Internavex would die but they thought it should be held every two years. And although it was difficult to get to the exhibition they had found the conference worthwhile.

One lecture, on "Educational technology and the developing world", pointed out that industrialized countries could profitably adopt innovations emerging in the Third World. One example was the use of functional literacy methods to combat adult illiteracy; another, the nomadic education scheme.

Patricia Santinelli

'If there must be grading let the stress be spread throughout the year'

A great deal has been written in recent years about changes in assessment although not to much avail. Working party after working party, generation after generation of students have retraced each other's steps over the now well-trodden ground. But few of the debates have led to changes in conventional practice or to the assumptions which underlie it.

A number of universities now allow a proportion of course work to be taken into account in finals but this almost invariably counts for less than half the total marks and is usually justified as a safeguard for examinations that do not do a particular student "justice". Most of the curriculum changes which the Nuffield Higher Education Group have encountered retain the three-hour written examination as the central method of assessment.

Some modifications to the form of examinations have been introduced: "open book" papers; extension of the three-hour time limit; foreknowledge of the questions. And in a number of cases, the "great race" is now run in instalments: the hurdling some of the hurdles to the second year of the course. However, few institutions have moved far from using the examination as the basis for classifying their students or presenting results in traditional forms.

The arguments for continuing any long tradition are tempting and powerful. The ritual and machinery are well institutionalised: the external examiners know the standard, and the administration is geared to handling the results. Expectations are set, met and annually confirmed. What is more, many a member of staff would argue it is the students themselves who really want to continue the status quo. Students sometimes confirm this view once they have successfully learnt to "play the system".

Even so, there are growing signs of dissatisfaction with the present tradition. The very nature of some of the more pervasive curricular innovations imposes new strains on old machinery. There are certain groups of students for whom the conventional examination now comes as an irrelevant and inappropriate jolt.

For example, students who have worked largely in small groups find that they cannot exploit the full potential of this method of learning if their efforts are judged solely on the results of conventional examinations at the end of the final year. Equally, students following independent learning programmes, with assessments built into the course at intervals, point to the absurdity of having to set all this work aside for a single "make or break" terminal exercise. The point is that examinations, while testing a whole range of other skills, fail to measure the intellectual skills developed over three years at university.

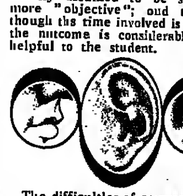
One major function of assessment—to improve teaching and learning—is certainly often overlooked and with it an opportunity to give students a means to appraise critically their own intellectual competence. On the assumption that intellectual development does not stop at graduation, forms of assessment other than three-hour examinations may well have a greater practical long-term value.

There are two styles of assessment which can make a positive contribution to learning as well as meet the requirements for public accounting at the end of the course. Both involve students taking part in evaluation of their own competence. One is based on self-student negotiation and the other on the progressive development of a sustained piece of work.

Negotiation of assessment between staff and students, exemplified, for instance, in one of the environmental science courses at the University of East Anglia, shifts the emphasis to some extent away from judgment of the final product and invites discussion of teaching and learning, start decide together what is to be assessed, how and when. This encourages tutors and students to examine the positions they hold in relation to the area of knowledge they are studying. It also reduces the "game-playing" that frequently takes place over assessment.

The second approach is characterized by the system of reworked essays in the German studies department. Here the emphasis is on the re-working of essays presented at seminars throughout the year. Similarly invites discussion of teaching and learning and provides an opportunity for students to improve their performance on the basis of feedback from other students and tutors. Those who have worked in this system comment that the deadline stress, often the bane of examinations, is not removed but spread throughout the year. And the stress is more productive, they claim, since it encourages them to raise their own intellectual standards. The proof is the product they have at the end.

These approaches obviously have their own particular disadvantages; for example, factors of personality may prejudice judgment; results tend to be difficult to compare; the whole process takes up a lot of staff time. But one could argue that the subjective judgment involved in marking or grading is open to the same criticism even though it is usually assumed to be somehow more "objective"; and that although this time involved is greater, the outcome is considerably more helpful to the student.



The difficulties of comparing and combining results for classification are sometimes seen to be a drawback to the introduction of alternative forms of assessment. Challenges to degree classification are age-old. Without going over the debate a few simple points can be made. Present practice is often justified on the grounds of public recognition—employers know what a 1t .1 is worth—or private satisfaction—students like to know where they stand in relation to their peers. But there is remarkably little evidence that a student's degree class significantly affects his or her subsequent career; indeed, many employers seem to set more store by personal references and to decide on subsequent promotion in terms of competence in the job.

One can equally well take issue with the claim that students want to be graded against their peers. The main concern for the majority is in gain a basic qualification. In so far as they may also want to be judged, it is more often in terms of their own intellectual potential than in terms of how much better or worse they are than somebody else. Students who have experienced working in small groups become sharply aware of individual differences in competence, skills and styles of learning and are accordingly more sceptical of the assumption implicit in the awards of classified degrees—that their multi-dimensional qualities can be neatly and precisely summarized on a unidimensional scale.

There remains the argument that classification is essential for the award of research grants. Given present regulations, this is undeniably true. But if it is the only valid reason for retaining degree grades, we might question whether it is justifiable to classify everyone for the sake of the small percentage who go on to postgraduate work.

There seems to be no *prima facie* reason why essays, projects and performance in group discussions should be assessed at different points in time, diagnostically located in summarily, and results presented in a way which distinguishes different abilities. One alternative that is often proposed, and is currently adopted by the Birmingham School of Architecture, is a profile of judgments of a student's skills and abilities.

But if grading is here to stay, say students who recognise that they have strengths that are not measured by examinations—let these be acknowledged in the way results are presented. Better still, let us be consulted as to how and on what criteria results are determined.

Helen Simons

Helen Simons is a member of the Group for Research and Innovation in Higher Education.

Mr St John-Stevas on the state of the universities

'We are unrepentantly pro-university'

At a time when Lord Crowther-Hunt on behalf of the Labour Party is suggesting policies which would destroy the freedom and autonomy of the university community, and Mr Jo Grimond, for the Liberals, is pitting forward the counsel of despair of the closure of one or more of our universities, I am happy to say that the Tory Party remains unrepentantly and unreservedly pro-university.

The universities are essential to the cultural and material progress of our society. They provide us with the cultural and critical centres necessary to our advance as a nation. Like the grammar and direct grant schools, they benefit those who have never entered their own particular disadvantages; for example, factors of personality may prejudice judgment; results tend to be difficult to compare; the whole process takes up a lot of staff time. But one could argue that the subjective judgment involved in marking or grading is open to the same criticism even though it is usually assumed to be somehow more "objective"; and that although this time involved is greater, the outcome is considerably more helpful to the student.

Lord Crowther-Hunt can prate about "relevance" but the truth is so often that today's relevance is tomorrow's irrelevance.

The idea of trying to attract more students into science and technical subjects with the emphasis on quantity rather than quality on the assumption that scientific training equips students better than an education in the arts or humanities, reveals a paucity of ideas and a dearth of reasoning appalling even for this Government, which is rapidly, thanks to its policies in the arts and educational fields, earning a reputation of being the most philistine in our long history.

Higher education in universities must continue to conserve our cultural heritage as well as to push forward the boundaries of knowledge. This is not a utopian picture of what a university should do; this is what actually is.

Universities have never had a single function, but they have through the years carried particular responsibilities as centres of disinterested scholarship, for the conservation and advancement of knowledge. Further, universities transmit knowledge in the new generations through that unique combination by which teaching is conducted by the same individuals who are exploring and extending the map of human knowledge.

Within this framework research remains vital. Research for most university staff is a prerequisite for and corollary to their teaching function.

When modern knowledge is changing so quickly, teaching related to research is vital. It must be stressed that universities in the United Kingdom uniquely offer this. As a result, universities have made a major contribution to the wealth of this nation, and what we need is more of this contribution, not less.

The policy of the Conservative Party on the universities is therefore clear. We cherish and esteem them as the crown of our educational system. They have served the nation well: the employment by industry and commerce of university graduates and the wide consultant function of university teachers is testimony to the fact that universities are relevant to the needs of the outside world and, indeed, are centres for advice, information and the practical application of ideas.

Our universities have given us the best first degree in the world and one that can be achieved in the shortest time. The wastage rate of students is among the lowest in the world: 9 per cent as opposed to 60 per cent in the United States and 40 per cent on the Continent. Student troubles have been highly publicized but they are mild compared to many other countries. Over the past decades the universities have carried through a massive expansion without any lowering of standards.

The country's economic difficulties have involved severe cuts in educational budgets, but universities have been singled out by the Labour Government for particularly harsh treatment. They are not merely being subjected to cuts; they find themselves at the wrong end of a hatchet.

The Times Educational Supplement on July 4 reported that: "Plans to cut education spending by at least £500m in the next four years are now being drawn up by officials in the Department of Education and Science. . . . But if the 10 per cent limit on wage rises announced by Mr Healey fails to bring inflation under control, the education service can expect an extra, short term cut of £50m this autumn."

Mr Norman St John-Stevas.

If past experience is anything to go by, universities will have to bear the brunt of this further cut.

Already financial cuts during the last academic year have resulted in the freezing of the number of academic posts and a massive reduction in maintenance.

The last academic year of 1974-75 with its reduced finance was intended to be a single exception during the present quinquennium; now the Government is treating this year as a base year for next year instead of reverting to the original quinquennium provision. It is almost as if the Government is intent on making universities bankrupt since the money they have taken away until will take away is committed money.

It is more than finances that are being threatened. The Government is attacking the autonomy of universities.

In the block quinquennial grant system the Government has a method which has been employed to the advantage of government and universities alike and through which universities have preserved their autonomy and government has been protected from charges of interference.

The quinquennial system also provides an administrative system which allows the dilution of global sums between institutions on an impartial basis through the University Grants Committee. University education can be planned on a time scale appropriate to the length and nature of degree studies with this system.

The firmness of the quinquennial guarantee of income has constituted a major part of its value. However, the cuts during the present quinquennium have made it imperative that universities be assured in future of a proper system of supplementation so that rising costs do not erode their fixed incomes.

British universities are national and not regional institutions. Their autonomy is protected by the block quinquennial grant system administered through the University Grants Committee. This must not be changed by any scheme of regional administration. Any development in means of cooperation with other institutions in this country or in the European Community should respect it.

The period of massive expansion of higher education is over for the moment, but the universities must have the means to do their job well. Cuts in education spending should be evenly distributed and universities should not be penalized in the interests of other higher education institutions.

The record of our universities is an excellent one and must not be allowed to be destroyed. University teachers in the United Kingdom have fulfilled their role with diligence and dedication. It is a poor reward for their achievements to discriminate against them so that a lecturer in a university is now paid anything between £600 and £1,000 less than his equivalent in a polytechnic, notwithstanding the recent pay award which has still to be implemented in the light of Mr Healey's proposals.

The freedom of discussion and inquiry in universities must be maintained. British universities are not closed institutions pursuing a lonely and isolated academic trail indifferent to their need for large sums of public money.

The natural links between universities and industry make the substantial body of knowledge and expertise which resides in the universities widely available. None of this seems to be realized by the present Government. It is Government ministers not university dons who are living in the ivory tower.

What we have to decide is how we can get the right balance between numbers and quality in universities.

Yet there is a problem. We face a period of financial stringency. If we restrict numbers what do we do about those who are disappointed? Can we perhaps make more use of the university of the air for this purpose?

Is there not scope for more sharing of staff and facilities between universities and polytechnics? Perhaps we might even see a change of attitude by the CNAA to the independent university which could contribute to university life without costing the taxpayer a penny.

In the economic crisis which is now engulfing Britain the universities must make their share of sacrifices but it must not be more than a fair one.

Edited text of an address by Mr St John-Stevas, Opposition spokesman on education, to the National Association of Conservative Graduates.

David Tomley writes the second article in our series 'The Active Student'

Slides: a framework for learning

Knowledge is useless to a student until he makes it his own, and to do this he needs to be involved in some relevant activity which uses that knowledge. Lecturers who (principally) display their own (superior) skills as they (continually) dominate the proceedings tend to depress all but their most able students.

In fact, a student probably learns more and gains its satisfaction and confidence from solving a problem carefully posed to engage his or her intelligence. His personal stumbling and hesitant actions, as he does so, may be more valuable to him than the ordered thoughts of someone else.

Passive listening to explanations often results in a lessening of interest, but engaging students in activity in which they are taking the initiative can bring about greater involvement and better learning. One kind of resource material which can be used to support such an activity is 35mm slides.

Slides are cheap; they are another source of input, visual as opposed to aural. But they do more than just convey a greater amount of information in a shorter time. They create a new framework within which learning can occur, moving beyond the idea of a single lecturer in a room with a large group of students.

As a stimulus to active participation by students, slides come into their own with small groups. They can be used to promote observation more easily as the group leader is able to question students. They are also invaluable tools for promoting discussion (for example, comparing and contrasting slides A and B, which perhaps show changes with time or changes in space), for asking for critical comment, for developing language skills, and even for changing attitudes.

Moreover, using slides with small groups can help in developing students' intellectual skills. They may become aware of errors in their thinking and find they need to reassess or rearrange their knowledge. They will increase their knowledge, possibly receive criticism from their peers, come to take account of other people's views and learn through discussion with each other, with a resulting change in their own views and attitudes.

Used in conjunction with tape sequences, slides make a valuable contribution to individualized learning techniques. Audio tutorials are very useful for revision purposes, for learning new skills and as aids in practical classes.

Their use is increasing as modules, units and minicourses which emphasize individualized learning. Class time can be saved, for example, when an audio tutorial is prepared on a topic instead of a lecture given on it. If they are freely available they enable the student to choose when and where he uses them and they can be used at his pace and as often as he wishes.

With large groups in a lecture slides give a focus for both the lecturer and students. They add an extra dimension to existing practice if they are visible, interesting, informative, and relevant, and provided that the lecturer has an easily manageable set-up.

They can provide stimulus and impact material, a change of activity—looking and listening instead of just listening; they can give the opportunity to view something it is impossible or inconvenient for the group to visit. They can also be used before educational visits or field trips to alert the students to aspects which the tutor particularly wants them to note.

Projecting slides of microscope preparations can ensure that students know what they are looking for in practical classes. Furthermore, a slide sequence can convey the particular emphasis that a lecturer wants and give the lecture a more personal flavour.

However, as the amount of knowledge increases, courses cannot simply be lengthened or more material crowded into the same time. A reappraisal has to occur, and we must pose such questions as "What is the purpose of the course?", "What do I hope the students will get out of it at the end?".

I suggest that if one of the aims is to develop the intellectual skills of students then the use of 35mm slides may help. It is no use pretending that they can accomplish much on their own, but used sensitively and in conjunction with other methods they can help to achieve this aim.

The author lectures at the School of

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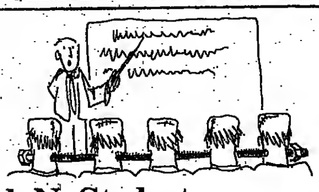

Frank N. Student—manager

Brainchild of a world-famous cybernetician and a distinguished professor of biology, Frankenstudent seems destined to change the face of higher education in this country.

Designed to provide student material more predictable and more amenable to discipline than his human counterparts, and, above all, more readily switched from one course to another to meet the teaching needs of academic staff, Frankenstudent is assured of a welcome in all university and polytechnic departments whose courses are undersubscribed. And how much better to support this all-British product than to rely on filling gaps by importing students from overseas!

To the greatest secrecy, Frankenstudent has already completed a "dry run" on a short course at a famous centre for management studies. Although it has to be recorded that he failed the course—and I shall explain about this later—his "coming live" must be rated an outstanding success.

Only minor cosmetic alterations were needed to make him indistinguishable from other men on the same module, all chosen from middle management to take "a wider and deeper view" as a preparation for further responsibility. To help him meet the challenge of this intensive educational experience, Frankenstudent was loaded with a special "management word pack" which predisposed him to use with appropriate frequency words like structure, goal-formation, orientate and heuristic—especially heuristic, regarding queen of the jargon vocabulary. He was also programmed with a wide range of phrases such as "I'm sorry, I'm not with you on that", "Let me think about it", "Let me check with my office", "Let me check with my computer", "Let me check with my wife", "Let me check with my mistress", "Let me check with my boss", "Let me check with my mother", "Let me check with my father", "Let me check with my brother", "Let me check with my sister", "Let me check with my son", "Let me check with my daughter", "Let me check with my dog", "Let me check with my cat", "Let me check with my goldfish", "Let me check with my parrot", "Let me check with my canary", "Let me check with my budgerigar", "Let me check with my hamster", "Let me check with my guinea pig", "Let me check with my rabbit", "Let me check with my tortoise", "Let me check with my snail", "Let me check with my worm", "Let me check with my amoeba", "Let me check with my virus", "Let me check with my bacterium", "Let me check with my fungus", "Let me check with my mushroom", "Let me check with my toadstool", "Let me check with my fungus", "Let me check with my lichen", "Let me check with my moss", "Let me check with my liverwort", "Let me check with my hornwort", "Let me check with my horsetail", "Let me check with my fern", "Let me check with my cycad", "Let me check with my conifer", "Let me check with my ginkgo", "Let me check with my cycad", "Let me check with my fern", "Let me check with my horsetail", "Let me check with my hornwort", "Let me check with my liverwort", "Let me check with my moss", "Let me check with my lichen", "Let me check with my fungus", "Let me check with my toadstool", "Let me check with my mushroom", "Let me check with my fungus", "Let me check with my bacterium", "Let me check with my virus", "Let me check with my amoeba", "Let me check with my worm", "Let me check with my snail", "Let me check with my tortoise", "Let me check with my rabbit", "Let me check with my guinea pig", "Let me check with my hamster", "Let me check with my budgerigar", "Let me check with my canary", "Let me check with my parrot", "Let me check with my goldfish", "Let me check with my dog", "Let me check with my cat", "Let me check with my son", "Let me check with my daughter", "Let me check with my mother", "Let me check with my father", "Let me check with my brother", "Let me check with my sister", "Let me check with my wife", "Let me check with my mistress", "Let me check with my boss", "Let me check with my computer", "Let me check with my office", "Let me check with my mistress", "Let me check with my boss", "Let me check with my computer", "Let me check with my office", "Let me check with my wife", "Let me check with my sister", "Let me check with my brother", "Let me check with my father", "Let me check with my mother", "Let me check with my daughter", "Let me check with my son

Eric Hewton discusses the Nuffield report, "Supporting Teaching for a Change"

How the art of seduction could improve university teaching

A lot of people these days are saying that teaching in universities is not what it should be. It should be improved to help the learner, say the educationalists (not themselves until for their teaching prowess). It should be improved, says the minister, to increase cost-effectiveness and thereby help the economy. It must be improved, say the students, because we know that it can be done better.

But what does improvement mean? Teaching is like the subtle art of seduction: motivation is the key. The battle is more than half won when the teacher has stimulated the learner to learn. Might it not be sensible to extend this notion to the improvement of teaching, and to ask of the academic what makes him want to learn more about teaching?

The Nuffield Group for Research and Innovation in Higher Education has attempted to tease out the answers to this question in a recent study of forms of support for teaching developments. The message in their report is clear. Efforts to improve teaching through the provision of media and consultancy services, through training, or financial inducement, have disappointed expectations largely because they have not been welcomed by or find the backing of those they were meant to help. The necessary motivation has been dubious of, or improvious to, the value of what has been offered them.

Few television and audiovisual services have in the event been outstandingly successful. Optimistically, they claimed at first that they could improve teaching and reduce its cost. However, many participating teachers were disappointed: neither advantage was realized despite the extra work they had to put in.

Those responsible for running such services have begun to acknowledge the difficulties; and many of them now attempt to identify the real interests of the teacher by looking more closely at the day-to-day problems of teaching and learning. The results of this "client-centred" approach have on the whole been more promising.

Some universities have appointed special consultants to help with teaching and learning problems. They too have found it difficult to persuade academics of the need for their expertise. Educational technology has characteristically tended to offer ready-made solutions of a general kind, few of which are regarded by academics as relevant to their immediate concerns.

Without going through the intermediate stage of helping teachers to recognize and diagnose their particular difficulties, educational technology had little of practical value to offer. The consultants in their turn have now been obliged to seek common ground with academics.

The common ground is most appropriately (and in retrospect very obviously) "the course". Here consultants can be useful working with individuals or groups in a detailed and down-to-earth way on matters of course design, on difficulties arising from laboratory work or tutorials, or on problems of assessment or evaluation.

In general there have been some modest successes. But progress has been slow, and intermittent, and contact between teachers and those kinds of services has often been precariously established. One fashionable view among some of those who have help to offer is that if teachers are not sufficiently motivated to use the facilities available, some sort of training might help to "open their eyes". But this raises questions: who should be trained, when, by whom and how?

The provision of "induction courses" for new teachers is now widespread, but the courses tend to be too general and too remote from the realities of teaching; they usually appeal to only a small proportion of teachers. More recently (perhaps with an eye on the very high motivation to which student projects seem to give rise) "training" has tended to be conceived in more active and participating terms and has been organized through workshops rather than lectures and seminars.

Over two or three terms, analysing problems associated with their own or each other's courses, and putting forward and developing possible solutions.

The working philosophy and assumptions of many departments reveal one major reason why the improvement of teaching is not generally regarded as important: academics are valued primarily in terms of their research. Criteria for tenure and promotion decisions usually make this clear.

Efforts have admittedly been made by a few institutions to reward outstanding contributions to teaching through promotion. However, it is one thing to legislate for this in an employment contract and quite another to operate a system which makes it work in practice. Many academics would doubt whether it is possible to assess originality and excellence in teaching.

The use of questionnaires—one of the methods often advocated—tends to alienate both teachers and students. There are other possibilities, but these have so far been given scant attention: for instance, notice could be taken of publications in educational journals; the development of course materials; participation in collaborative teaching projects, course teams or study visits; work on relevant working parties or committees; contributions to conferences on teaching topics; supervision of postgraduate work on educational themes; and appeals to external or internal referees.

Promotion—important as it may be—is not, of course, the only motivating factor for teachers. There is considerable reward to be had from enjoying one's job, knowing that one is doing it well, and knowing that one's efforts are valued by others. Yet at the *moment, little seems to* be done to increase the "job-satisfaction" of an academic's teaching activities.

The extra work which a teacher puts into the improvement of teaching is seldom properly recognized by his colleagues. Additional time and resources are rarely made available and the teacher who persists despite the general apathy of his peers and seniors is often seen as an embarrassment rather than an asset to his department.

Why every academic should be expected to give his time to research, administration and teaching, usually to that order, remains a puzzle to many enthusiastic teachers. In most activities, other than education, some specialization, according to interests and expertise, is encouraged, especially if it contributes to the needs of the organization. Yet those academics who have decided to give more attention to their teaching than their research freely admit that they have taken a big career risk.

Only a small minority of universities have so far devised planning and budgeting systems which directly promote attention to teaching by departments and cater for the especial needs of new developments.

The formula on which the annual allocations of funds is based is usually historically derived: departmental chairmen are seldom called upon to justify its appropriateness to their present requirements. There is little incentive or opportunity for them to argue for additional resources or alternative kinds of funding to permit developments in teaching.

Moreover, the planning system is seldom understood by academics, only a limited number of whom take part in the detailed negotiations that provide the wherewithal for running undergraduate courses. In the few institutions which depart from this stereotype, the debate over departmental allocations is more wide-ranging; the planning and budgeting procedures are designed to direct discussion towards teaching needs; and the necessary adjustments are made in the resources required to support different types of course.

Two or three other universities have sought to bring about improvements in teaching by creating a "teaching development fund", in which the aim is to provide small additional amounts of money to eligible individual teachers or departments to launch innovative developments.

Most science and engineering courses in polytechnics have, in recent years, come to include "science and society" and "technology and society" courses as part of their curriculum, almost all of which have developed from "general" or "liberal" studies programmes.

The major problems now facing teachers of social studies of science and technology, not only in polytechnics, but also in universities and colleges of technology, are to break away from the "general studies" concept and context, and to have this new area of study recognized in its own right. In short, to have social studies of science and technology become an integral part of science and engineering curricula.

This supposed dichotomy between "liberal education" and "technical education" has been a live issue in Britain for over a century. Technical education has always been seen by its critics to be lacking a "liberal" or "humanist" element.

What this had come to mean in the late 1950s was crystallized in the Ministry of Education's Circular 323 (1957), entitled *Liberal Education in Technical Colleges*. This suggested that all students taking science and technology in non-university sectors of higher education should take some form of non-vocational study to encourage the development of "a broad outlook and a sense of spiritual and human values."

These objectives were usually met by courses run by a liberal studies department which serviced all the courses of a college. To counteract the growth of "science and society" courses in polytechnics, and some of the problems that have been encountered

Michael Worboys discusses

put on courses that tended to be wide-ranging and eclectic, aiming to "civilize" and "mould" the whole person.

Despite general agreement on the desirability and potential value of including a broadening element in technical education, its practice began to—and in many cases still does—encounter adverse reaction. Being both unrelated and subordinate to the students' main course of study, it was considered by both student and teacher alike to be irrelevant.

Liberal studies teaching assumed the existence of certain deficiencies in conventional technical education, but it sought only to compensate for these, such as would seem more appropriate, to articulate and make students aware of the perceived deficiencies.

For most, the deficiencies were and still are associated with narrow specialization. That is, the failure to teach more than the technical aspects of a subject, the failure to look at the limitations and social implications of these subjects, the failure to prepare students for their role in social life, and the failure to see science and technology generally in a social context.

Over the years many liberal studies teachers, especially those specializing in service work to science faculties and those who were former scientists and engineers, realized these failures and began to develop teaching in social studies of science and technology.

Initially they were not helped by the guidelines on liberal studies. Overall policy on liberal studies in polytechnic institutions has been governed by the regulations of course validating bodies. Primarily this has come to be the Council for National Academic Awards, although agencies responsible for Higher National Diploma and Higher National Certificate and other courses remain important.

CNAA policy, laid down in 1964, stated merely that "All courses must include studies which by complementing and contrasting with the main subject studied will help provide a balanced education". The social and economic problems, in practice usually meant students were introduced to problems in sociology or problems in economics. The question of relevance and relatedness remained.

This type of problem, and indeed the whole status of liberal studies, was made worse by the designation of the polytechnics, and the subsequent growth of separate arts and social science faculties as disciplinary-based departments.

Most of these departments evolved from liberal studies service departments and it is often amongst staff in these new departments that the liberal studies concept is most discredited. This attitude is in part a reaction to their former subsidiary status and in part to a new preoccupation with their own disciplinary based courses.

For those liberal studies staff who remain committed to the reform of science and engineering courses, those changes, which occurred around 1970, presented a much weaker institutional position. However, this has been compensated by other, more favourable developments.

First, there has emerged a widespread and growing interest in the social dimensions of science and technology. This interest ranges from science and technology policy and environmental problems, to the new perspectives in history and sociology of science.

Secondly, in 1971 the CNAA reformulated their regulations on liberal studies, stating that all their courses should "attempt to satisfy the following limited educational aims . . . to make the student aware of the limitations of his discipline and their methods and to provide opportunities for him to understand, make, and criticize value judgments . . . to give the student an understanding of the significance of science, technology, economics and sociological factors in modern society . . . ."

Many people have interpreted this part of the CNAA regulations, reaffirmed in June 1974, to be a direct call for teaching in social studies courses. Indeed, a few polytechnics, often those where arts and social science courses were slow to develop, have made substantial curriculum innovations in this direction; for example, the "science and society" group at Newcastle-upon-Tyne and the "modern sciences" group at North-East London.

However, in most polytechnics an inconclusive battle is still being fought to have social studies of science and technology accepted as an important part of science and engineering curricula.

Problems arise because the force for change is coming from outside the science and engineering departments themselves, in other words from a previously subordinate subject area. Furthermore, any change of broadening of established subjects encounters the problem that not only do these moves attempt to redefine what counts as a science and engineering education, but ultimately they challenge the hegemony of conventional disciplines and hence of professional interests.

The actual content of social studies of science and technology teaching in polytechnics has responded to a number of forces and objectives, and these are reflected in five conceptions of the subject.

On many courses social studies of science and technology are taught as a *humanism*, the history and cultural role of science and technology being emphasized. This conception is closest to the old liberal studies concept and bears many of its deficiencies, although in a number of instances this conception is successfully taught on arts and social science courses.

In other conceptions a more explicit relationship to science and engineering courses has been sought. A number of courses stress the notion of *social responsibility*, that is, of drawing out the social and moral problems of modern science and technology.

The Council of Engineering Institutions regulations for the "engineer in society" course embody this conception, although in practice this course often tends

The author is a member of the

Decisive newts point to a formula that predicts human behaviour

Conventional ideas of how animals—including man—make decisions may have to be revised drastically if new findings by the Animal Behaviour Research Group at Oxford University prove correct.

Their research is at present confined to decision-making in insects, stickleback, grass tits and herring gulls, but Dr O. J. McFarland, who directs the group, believes that eventually their results will be applied to man—and might have powerful consequences where financial decisions are concerned.

Research on human decision-making is a growth point but it is chiefly carried out by economists and social scientists; Dr McFarland claims the social science approach begins with the assumption that man behaves as a rational economic being. He says: "We are not prepared to believe that man has yet gone all the way in the process of evolution."

The Animal Behaviour Research Group is very new. It was established last October through the fusion of two research teams, Dr McFarland's experimental psychologists—an interdisciplinary team of zoologists, mathematicians and psychologists—and the animal behaviour group of the eminent ethologist Professor Nikolaas Tinbergen. Professor Tinbergen retired last year although he still retains a room in the department and continues with his work on adaptive radiation.

The new group has only three established staff, Dr McFarland and Dr Richard Dawkins and Dr Marian Dawkins, but there are some 30 research fellows, research students and research assistants in the team. It has already built up a high reputation; John Krebs, son of Sir Hans Krebs, the distinguished biochemist, gave up a tenured post in the University of Wales to work as a research fellow on bird song and foraging behaviour with the group.

Like all research groups in Oxford, the team is suffering from lack of finance—Dr McFarland says it would be doing twice as much work, especially overseas, if funds were available, but the existing programmes are supported by the Science Research Council, the Medical Research Council and the Natural Environment Research Council.

The Oxford group is, on the theoretical side, essentially concerned with a systems approach in decision making in animals, as Dr McFarland put it: "Discovering how animals are designed by nature to spend their time in the most useful way—or if you object to the word 'useful'—maximizing Darwinian fitness. It is a multidisciplinary study involving zoologists, laboratory experimentalists and mathematicians."

Animals make decisions chiefly about the use of resources, according to Dr McFarland, and they do this according to sets of rules. If these rules could be uncovered and understood, the conclusions might be of use to man.

He argues, for example, that much decision making is based in the design of an animal rather than in a process requiring intelligence. If this is accepted it should be possible to derive a mathematical expression which could be used to predict animal behaviour given any fixed set of circumstances. This would apply to man as well as other forms of life.

Dr McFarland says his group has now produced an early version of such a formula and the results will be published shortly in the international ecological journal *American Naturalist*.

He explains that most animal decisions are based on a form of cost-benefit analysis; the animal undertakes the kind of behaviour which gives it the most benefit from the least input of energy. Such behaviour is a design feature resulting from the animal's evolutionary history, rather than a cognitive development.

One early result of Dr McFarland's work is the finding that decision-making is not a competitive process but a time-shared process. Conventionally, animals have been expected to make decisions to undertake various activities—feeding, establishing territorial boundaries, mating—according to competing instincts. When the urge to mate becomes stronger than the urge to feed, the animal will indulge in sexual behaviour and vice versa.

According to Dr McFarland at any one time there may be a single major behavioural directive—say, nest building and maintenance, but during the same time other activities must be performed: courting or foraging for food.

Time for these activities is shared with time taken for the major activity in rather the same way that a large computer system shares out real time between all the various tasks assigned to it. The animal, however, allows a very specific amount of time for these subsidiary tasks. If prevented from carrying them out it will return to the main task as though it had actually performed its subsidiary duty.

Or McFarland illustrates this by considering a lecturer who inevitably spends five minutes telling a joke during his lecture. If prevented from telling his joke by some mishap which fills the whole five minutes, he will not take time later on to tell it.

There are probably no other groups in the world carrying out research exactly like this Oxford team and in fact few groups have access to the kind of field conditions with which they are favoured—there is, for example, the herring gull colony to which Professor Tinbergen devoted 20 years of research.

Dr McFarland is clearly excited about the possibilities in his work although he remains modest about their immediate applicability to human problems. "Nobody is going to pick this up and take it to the United Nations and say: 'If we use this formula everything is going to be all right'."

Nevertheless, his data is already sufficiently impressive to suggest that economic analysts could well improve their predictions using a little basic biological knowledge.

Alan Cane

Guy Neave discusses the implications of a 'manpower-planning' approach to higher education

No instant cures in the new dogma

It was customary in France of the seventeenth century to ask relapsed heretics whether they preferred prison, mines or "noisome galleys" as price of their continued obduracy. However bizarre the penalties, they were meted out in the belief that, if they did not secure salvation for the relapsed and the damned, they nevertheless had the inestimable advantage of eliminating heresy and securing the stability of the state.

Much of today's debate on higher education could be illustrated in similar terms. Indeed higher education seems to share the exquisite dilemma of thinking itself orthodox but being accused of heresy. Alas, its orthodoxy clings to the old religion of Robbins and student choice rather than the new rigours of "manpower-planning"—positive or otherwise—as enunciated in the Gospel according to Lord Crowther Hunt.

Now one indispensable condition of setting up a novel creed, especially if you want to convert the old believers to seeing the error of their ways, is that you have, first, the apparatus to do it; and, second, that you are clear about the floor points and repercussions of the new dogma and doctrine.

Nobody expects the Spanish Inquisition to be benefit of an Jesuits. But having had the first taste of forceable conversion to the twin doctrines of "national interest" and manpower-planning, this seems to be precisely the situation that is emerging.

Like most radical reforms, the notion of "positive" manpower planning in higher education as the keystone of the Government's future policy remains obscure, both as regards its assumptions and its repercussions in the higher and the secondary sector. Or if not obscure, then at least coy about what is required.

It is one thing to suggest, as the Minister of State did in his Scarborough speech in May, that "... we need to do what we can to advise young people—when they make their future career decisions—how best they might match their talents to the nation's needs", it is another to create the means by which that target may be attained.

If one takes his proposals at their face value then the type of reforms, both pedagogic and institutional, necessary for carrying out this policy are so far-reaching that they constitute what is perhaps the most radical—and best disguised—programme for change presented since the 1944 Education Act.

Whether a "manpower-planning" approach on its own, without concomitant educational and room-and-branch administrative change to accompany it, is capable of achieving anything significant is somewhat doubtful. What primitive and timid efforts have been made in this direction have proved themselves woefully inadequate.

The boom and slump rhythm in the teacher supply area might to some appear to be a crisis of capitalism extended to the classroom. To others it is more reminiscent of the Marxian economic theories of Duck Soup not *Das Kapital*.

As for what passes as "manpower" planning in medicine, that is perhaps a delicate way of describing one of the most effective restrictive practices yet known. The number of students in medical faculties follows the needs of the medical profession, not generally of the community at large.

But if the laissez faire model of educational development has failed, as the Minister suggested—and few would disagree with him—what are the reforms that will assure some degree of success for this interventionist model he proposes to substitute?

In most spheres to which "manpower-planning" is applied, two basic elements are required—predictability and adaptability. The first to match the supply of qualified labour to the labour market, the second to be able to shift those skills across into the growth areas of the economy when the need arises.

The problem with the current relationship between secondary and higher education is that while it might have the first, it does not have the second. As exercised, our curriculum and subject choice patterns in school are highly predictable, and decisions are taken far, far too early.

The future scientist specializing at 14 years of age is scarcely credible even outside a caste system. In short, adaptability (and even, as my own researches have shown, student wishes) has been sacrificed to predictability.

On the other hand, if we go to the other extreme and place the emphasis upon flexibility alone, than predicting future demand and the areas it is likely to fall becomes a yet more hazardous exercise, even within the limited confines of the present 15 per cent of the age group entering higher education.

The only way to meet both sides of the "manpower-planning" equation is by creating a common or compulsory core course right up to post-secondary education. Effectively it is only under such a prior condition that school leavers, at any level, will best be able to match their talents to the nation's needs, that is, by keeping their options open across the arts/science divide.

Attempts to build a "generalist" approach to the education of 16 to 19-year-olds have, of course, permeated the myriad proposals for curriculum reform that filtered the working papers of the Schools Council like heaps of the slain in the aftermath of battle. The question is whether we can afford to continue an early specialization, whose origins are to be found in the classics curriculum of the public schools in the late nineteenth century.

It is possible that planning for the "positive manpower approach" envisages none of these proposals. What would be the consequences for secondary and higher education? And how indispensable is a core secondary school curriculum to the whole reform?

Let us suppose that "flexibility" is to be confined merely to those who go to higher education. The risk of making "flexibility" exclusive to the top 15 per cent is twofold. First, at a time when all types of talent and ability are required, can we define sufficiently adequately the type of ability that will be required in, say, five years' time? Can we therefore be correct in excluding those abilities that are not thought to be relevant over that time span from the chance of benefiting from post secondary education?

Secondly, 15 per cent of the age group in higher education may result in grotesque self-congratulation by the Committee of Vice Chancellors and Principals, but it is a small proportion of the work force.

Unless we are going to create an education system, secondary and post-secondary, based on the distinction between the "flexible" and the "non-flexible"—a kind of manpower-planner's version of bipartite secondary education—then reform must begin at secondary school. Without such reform there is the real possibility that the incentives contemplated for the post-secondary sector—universities, colleges of further education and polytechnics—will remain stillborn.

However, let us suppose that a week-kneed English compromise is reached and that "flexibility" is fudged one way or another to be confined to the top 15 per cent. In addition to the cuts and the closing of the student staff ratio, post-secondary education will need to undertake a further task over and above the matching of the individual's skills and predilections to the "national interest".

It will also have to re-educate our, alternatively, "de-specialize" school leavers. Post-secondary education will have an additional task of assuming the full burden of educational and economic change, and of undoing the distortions in the secondary sector that impede "flexibility".

This is an immense programme. It is all the more difficult because the teaching body at all levels—school, college and university—has been used to the idea that ability demands specialization as price of its development. Early specialization, not flexibility, is the English vice.

Naturally it is possible that what is meant by a positive manpower planning" collects not so much a programme for future action—though inaction is, in the long run likely to prove far more expensive—as merely an administrative state of mind, a way of viewing the educational world and justifying the tightening of purses, paunches and research grants.

If there is one lesson to be learnt from the unremitting application of such an approach to education however, it is that without the reform to realise it, "manpower planning" methods on their own are no recipe for instant cures.

The author is a research fellow in the Centre for Educational Sociology at Edinburgh University.

Bringing a critical approach to science into the polytechnics

Michael Worboys discusses the growth of 'science and society' courses in polytechnics, and some of the problems that have been encountered

Most science and engineering courses in polytechnics have, in recent years, come to include "science and society" and "technology and society" courses as part of their curriculum, almost all of which have developed from "general" or "liberal" studies programmes.

The major problems now facing teachers of social studies of science and technology, not only in polytechnics, but also in universities and colleges of technology, are to break away from the "general studies" concept and context, and to have this new area of study recognized in its own right. In short, to have social studies of science and technology become an integral part of science and engineering curricula.

This supposed dichotomy between "liberal education" and "technical education" has been a live issue in Britain for over a century. Technical education has always been seen by its critics to be lacking a "liberal" or "humanist" element.

What this had come to mean in the late 1950s was crystallized in the Ministry of Education's Circular 323 (1957), entitled *Liberal Education in Technical Colleges*. This suggested that all students taking science and technology in non-university sectors of higher education should take some form of non-vocational study to encourage the development of "a broad outlook and a sense of spiritual and human values."

These objectives were usually met by courses run by a liberal studies department which serviced all the courses of a college. To counteract the growth of "science and society" courses in polytechnics, and some of the problems that have been encountered

put on courses that tended to be wide-ranging and eclectic, aiming to "civilize" and "mould" the whole person.

Despite general agreement on the desirability and potential value of including a broadening element in technical education, its practice began to—and in many cases still does—encounter adverse reaction. Being both unrelated and subordinate to the students' main course of study, it was considered by both student and teacher alike to be irrelevant.

Liberal studies teaching assumed the existence of certain deficiencies in conventional technical education, but it sought only to compensate for these, such as would seem more appropriate, to articulate and make students aware of the perceived deficiencies.

For most, the deficiencies were and still are associated with narrow specialization. That is, the failure to teach more than the technical aspects of a subject, the failure to look at the limitations and social implications of these subjects, the failure to prepare students for their role in social life, and the failure to see science and technology generally in a social context.

Over the years many liberal studies teachers, especially those specializing in service work to science faculties and those who were former scientists and engineers, realized these failures and began to develop teaching in social studies of science and technology.

Initially they were not helped by the guidelines on liberal studies. Overall policy on liberal studies in polytechnic institutions has been governed by the regulations of course validating bodies. Primarily this has come to be the Council for National Academic Awards, although agencies responsible for Higher National Diploma and Higher National Certificate and other courses remain important.

CNAA policy, laid down in 1964, stated merely that "All courses must include studies which by complementing and contrasting with the main subject studied will help provide a balanced education". The social and economic problems, in practice usually meant students were introduced to problems in sociology or problems in economics. The question of relevance and relatedness remained.

This type of problem, and indeed the whole status of liberal studies, was made worse by the designation of the polytechnics, and the subsequent growth of separate arts and social science faculties as disciplinary-based departments.

Most of these departments evolved from liberal studies service departments and it is often amongst staff in these new departments that the liberal studies concept is most discredited. This attitude is in part a reaction to their former subsidiary status and in part to a new preoccupation with their own disciplinary based courses.

For those liberal studies staff who remain committed to the reform of science and engineering courses, those changes, which occurred around 1970, presented a much weaker institutional position. However, this has been compensated by other, more favourable developments.

First, there has emerged a widespread and growing interest in the social dimensions of science and technology. This interest ranges from science and technology policy and environmental problems, to the new perspectives in history and sociology of science.

Secondly, in 1971 the CNAA reformulated their regulations on liberal studies, stating that all their courses should "attempt to satisfy the following limited educational aims . . . to make the student aware of the limitations of his discipline and their methods and to provide opportunities for him to understand, make, and criticize value judgments . . . to give the student an understanding of the significance of science, technology, economics and sociological factors in modern society . . . ."

Many people have interpreted this part of the CNAA regulations, reaffirmed in June 1974, to be a direct call for teaching in social studies courses. Indeed, a few polytechnics, often those where arts and social science courses were slow to develop, have made substantial curriculum innovations in this direction; for example, the "science and society" group at Newcastle-upon-Tyne and the "modern sciences" group at North-East London.

However, in most polytechnics an inconclusive battle is still being fought to have social studies of science and technology accepted as an important part of science and engineering curricula.

Problems arise because the force for change is coming from outside the science and engineering departments themselves, in other words from a previously subordinate subject area. Furthermore, any change of broadening of established subjects encounters the problem that not only do these moves attempt to redefine what counts as a science and engineering education, but ultimately they challenge the hegemony of conventional disciplines and hence of professional interests.

The actual content of social studies of science and technology teaching in polytechnics has responded to a number of forces and objectives, and these are reflected in five conceptions of the subject.

On many courses social studies of science and technology are taught as a *humanism*, the history and cultural role of science and technology being emphasized. This conception is closest to the old liberal studies concept and bears many of its deficiencies, although in a number of instances this conception is successfully taught on arts and social science courses.

In other conceptions a more explicit relationship to science and engineering courses has been sought. A number of courses stress the notion of *social responsibility*, that is, of drawing out the social and moral problems of modern science and technology.

The Council of Engineering Institutions regulations for the "engineer in society" course embody this conception, although in practice this course often tends

dent scientists and engineers to have formal acquaintance with certain "business and industrial skills" to make them more effective agents in a technological society, and perhaps to widen their employment horizons and prospects.

In some situations, especially where historians of science, historians of technology and philosophers of science have employed by former liberal studies departments, it is an unusual to find an academic conception of social studies of science and technology, directly modelled on professionalized academic disciplines like history and philosophy of science.

In each of the above cases social studies of science and technology are seen as an addition to the conventional curriculum which will supplement and extend its content. Most broader science and engineering courses are developing in this way, of late as a response to declining student numbers.

The final conception attempts to go beyond those discussed above by making social studies of science and technology an integral and *reflexive* part of the course. This conception not only seeks to inform students of different interpretations of science and technology and their social relations, but also seeks to relate these perspectives to the social process of technical education, and the social roles of scientists and engineers.

Social studies of science and technology are well represented in polytechnics, and could be destined to play an important part in the future development of polytechnic education. It would seem that teaching and research in this area is particularly appropriate to the distinctive type of education polytechnics endeavour to provide.

Furthermore, given the polytechnics' special concern with the inter-relationship between science, technology, industry and society, social studies of science and technology could fulfil a central mediating role with respect to these wider social interests.

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American news

An escape from male pressures

from Angela Stent

CAMBRIDGE, MASS

In the late 1960s, single-sex colleges, for both financial and social reasons, were caught up in a coeducation race. As more traditional alumni bemoaned the decline of old-fashioned education, many universities changed their statutes to admit students of the opposite sex. Yet hardly was the coeducation boom in full swing, than the women's movement reasserted the value of all-female colleges. As a result, women's colleges have experienced a revival in the last few years and the trend towards coeducation has been halted.

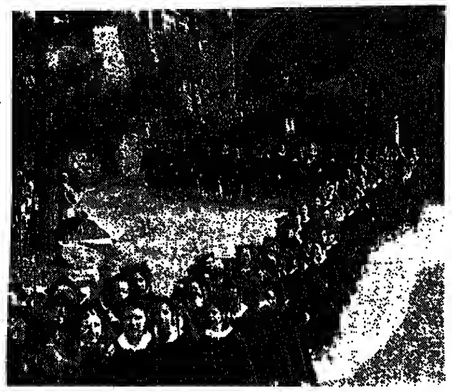
Many colleges made the decision to go coeducational before the full brunt of the women's movement had been felt. Because it took a few years to organize the changeover, some campuses have begun to function coeducationally only in the last couple of years when the idea already seemed passé.

Vassar College, one of the most famous women's colleges, whose alumni include Mrs Jacqueline Kennedy Onassis, has encountered some unanticipated problems since it began to admit men. One of its main difficulties is recruiting enough men of high academic quality. It had originally planned to increase its enrolment from 1,550 women to 2,400 students evenly divided between men and women. However, current enrolment figures are 2,200 students, of which less than one third are males.

The men's colleges that decided to admit women have been doing better than the all-female colleges that have gone coeducational. Dartmouth College, which began to admit women two years ago, has managed to increase its student body while keeping the male/female ratio at 10:1. Princeton, want coeducational four years ago and experienced relatively few problems, with a current male/female ratio of 2.5:1.

Yale University, which began to take women in 1968, admitted its first "sexblind" class this year. Harvard, which has always had Radcliffe College as its female counterpart, has just approved a plan to merge the admissions offices of Harvard and Radcliffe and to institute a "sexblind" admissions policy beginning in 1976. Harvard currently has 4,568 male students and Radcliffe has 1,719, but the plan does not envisage an increase in the overall size of the university.

Contrary to predictions of a few years ago, many women's colleges that decided not to admit men have been thriving in recent years. There are 135 women's colleges in the US, and in a recent survey conducted by the National Council of Independent Colleges and Universities, 43 per cent of those surveyed reported an increase in freshmen enrolment.



Wellesley College : new focus for women's rights.

Women's colleges have managed to reverse the trend against them by modernizing their curricula and attracting a different calibre of student. Many colleges have begun to stress the career-training component of their programmes and have de-emphasized the liberal arts elements of the traditional "female academias" whose main task was to prepare gracious wives for successful husbands. Now, female colleges are preparing women to compete with men in such fields as business, science, engineering and communications.

These moves have recently been reinforced by a five-year study of women defined as "career successful" by virtue of their inclusion in "Who's Who in American Women". Professor Elizabeth Tidball, of George Washington University, conducted the study and her findings show that graduates of women's colleges are more than twice as likely than their counterparts in coeducational institutions to be "career successful".

This study is one of the many pieces of evidence which Mrs Barbara Newell, an economist who became president of Wellesley College in 1972, uses to argue her case for the importance of woman's colleges. "One of the products of the last decade," she explains, "was the awareness of woman of their own needs and concerns as individuals. An institution which specializes in the education of women draws the support of these women."

In 1971, however, virtually the entire faculty of Wellesley favoured coeducation. They based their arguments on the inevitability that the female graduate would have to compete in the male world. The trustees of Wellesley disagreed, and they voted to retain Wellesley as a female college. They were supported by one of the final reports of the Carnegie Commission, which called Wellesley, Smith and Mount Holyoke, all single-sex institutions, a "national resource."

Under Mrs Newell's leadership, applications have risen by 18 per cent and Wellesley is gaining a reputation as a college which prepares women for professional careers exceptionally well. For instance, Harvard Business School accepts more women from Wellesley than from any other single institution, and economics, normally an unpopular field for women, has an unusually large enrolment.

Mrs Newell, a vocal advocate of women's rights in the academic world, has established a research centre at Wellesley which, when completed, is designed to be a world-wide centre for women's concerns, focusing on the socialization of women and their changing roles.

America's largest women's college, Smith College, in Northampton, Massachusetts, typifies the advantages of single-sex colleges in the current ecoonmic and social climate. Applications are up 13 per cent and Smith has just completed a successful $45m capital drive in which its alumnae do not seem to have been affected by the recession. Smith has recently been in the news because for the first time in its 100-year history, it has chosen a woman president who assumed her duties on July 1.

Mrs Jill Conway, a historian, is an Australian whose career has encompassed sheep-farming in the outback, modelling in London and teaching history at Toronto University. She will have an operating budget of $20m, plus an endowment with a market value of $60m, which puts Smith in a more fortunate position than many other colleges. With some 2,500 undergraduates and a faculty of 240, Smith has recently been charged with discrimination in its hiring.

The Massachusetts Commission Against Discrimination has curiously charged that Smith discriminates against women in its hiring, after two women who were denied tenure instituted proceedings against the college. Whereas 51 per cent of the faculty were women in 1958 the figure was 32 per cent in 1972. Smith appealed against the ruling on the grounds that no outside agency should be able to interfere with its hiring policy, a move which Mrs Conway supports.

Smith College, according to Mrs Conway, must "change the perception of employers that women have certain kinds of skills and something must be done to make women realize what skills they have". She also believes that "everybody should be literate in—computer science, statistics and information systems".

As many women's colleges revise their curricula, they are also beginning to attract a brand new pool of students: woman beyond the normal college age who now want degrees that will equip them for the job market. This new approach, common in smaller colleges, is also attracting more business recruiters than before, as firms scramble to fill more management positions with women so as to satisfy federal equal-hiring and equal promotion requirements. This has boosted the financial fortunes of many less venerable colleges.

While women students at female colleges pity their sisters in coeducational institutions, they reaffirm their preference for an environment free of male pressures. Said one Mount Holyoke student, "Here you have the opportunity to be the class president or editor of the paper. There are no males to compete with you, so you're more likely to become involved."

CIA 'read all papers it could find'

from Frances Hill

NEW YORK

In the course of their investigation of "dissident" elements in American society, CIA agents in the Office of Security read "all college papers the branch could get and had time to read", according to the Rockefeller Commission's report on domestic activities of the Central Intelligence Agency.

The CIA Office of Security began its investigation of "dissident activity" in December 1967 with the stated purposes of identifying threats to CIA personnel, projects and installations and determining whether there was any foreign sponsorship behind "dissident groups". Agents gained information from "willing sources", newspapers and other publications, including college papers.

Between 1967 and 1973 the office assembled between 500 and 800 files on "dissenting organizations" and "individuals related in various ways to dissident activity". About 12,000 and 16,000 individual names were included in these two files.

Rockefeller : probing CIA.

The commission's report does not state how many of the "dissident groups" or individuals investigated by the CIA were connected with universities and colleges. But files were kept on two university professors "publicly involved in coping with dissident activities", though not dissidents. The professors named were Dr S. I. Hayakawa of San Francisco State College and Father Theodore M. Hesburgh, of Notre Dame University.

While the "dissident activities" project was in operation, Office of Security agents prepared a special report "evaluating risks that dissident activities would interfere with CIA contract projects at state universities". Field offices made contacts with university and college officials "to determine the general level of dissident activity on each campus—and the nature and extent of activity directed against the CIA in particular".

Information gained from university officials was used to inform CIA agents planning to visit particular campuses for recruitment purposes whether they were likely to encounter difficulties. "If a recruiter intended to visit a campus where there were indications of trouble, the Office of Security would provide him with monitoring and consultations support."

If trouble arose while the recruiting interviews were in progress "appropriate warnings were communicated to the recruiter, law enforcement agencies in the vicinity were alerted, and arrangements were made for terminating the campus visit and leaving the campus". If the recruiter elected not to conduct interviews on a college or university campus the Office of Security would arrange for alternative interviewing space in off-campus facilities, if possible.

"Where necessary, similar assistance and communications support was provided at the off-campus site. In some instances the campus administration was so hostile that scheduled recruitment visits were simply cancelled."

The programme of assistance to recruiters was discontinued in 1970 by which time "revision in the agency recruitment programme and its watchdog agency, the General Accounting Office (GAO) is predicting an ultimate default rate of 24 per cent. GAO charges that HEW does not have an adequate collection programme.

For instance, on the nine university of California campuses, 45 student loans totalling $72,000 were nullified by bankruptcy in 1972. The figure rose to 90 for $148,000 in 1973 and 115 for $242,000 in 1974.

Most of the loans are interest-free until a year after the student leaves university, and students are given five to ten years to pay off their loans. Last year 35 per cent of defaults in the federally-insured programme were by college students and 53 per cent by students in specialized and vocational schools.

HEW'S policy on defaulted loans is changing as it tightens its loan procedures. Until lately, department collectors focused their efforts on prosecuting students who had not repaid their loans, even though students often claimed that the college had defrauded them.

One weapon which HEW is using in its investigation is the threat of ending colleges' eligibility to participate in the loan programme.

Whatever the outcome of the investigation, it seems that the entire concept of federal educational assistance may have to be reappraised. Congressional critics have advocated replacing the entire student-loan programme with a

Avant garde college is denied federal grant

The small state of New Hampshire is in an uproar because Franconia College, a small experimental institution there which espouses unconventional education theories, has been denied a federal grant to support an innovative cooperative project with a local school district. New Hampshire has one of the most conservative governments of any state, and the decision, many feel, was politically motivated.

Franconia, founded 14 years ago, has a student body of 380 and is considered one of the more avant garde colleges.

Its president, Leon Botstein, only 28 years old, is the youngest college president in the country. During his four years as head of the college, he has had to save it repeatedly from bankruptcy. Thatmost important thing higher education should do, he has said, is to "train citizens in the act of democracy, train them to have a sense of responsibility for the community".

As part of his philosophy, Botstein has tried to foster a sense of responsibility with a variety of student community service programmes. These include helping design a local high school, work with a mental health agency, and publishing a prison association newspaper—all controversial programmes in the conservative state of New Hampshire.

When Botstein came to Franconia, the college was in the throes of allegations that it was a hotbed of radicalism and immorality. The original charges were made by the Manchester *Union Leader*, New Hampshire's largest newspaper and one of the most right-wing publications in the United States.

While the *Union Leader* stepped up its attacks on Franconia, the Governor of New Hampshire, Meldrim Thomson, Jr (an ally of the newspaper) threatened the college with revocation of its charter for acting as host to a conference on prison reform.

Franconia's proposal to the fund for the improvement of post-secondary education was among 180 finalists from an original list of 1,800 proposals. Officials for the fund say that Franconia's proposal was not rejected through political pressure.

The proposal was endorsed by Dr Arthur Jensen, a former dean of Dartmouth College who now heads New Hampshire's post-secondary education commission, in a letter to Weinberger.

The *Union Leader* recently charged that "snobbery" was the motivation behind "Franconia College's arrogant assumption that it can impose its left-wing educational philosophy on citizens and students—whether the majority like it or not—and do so moreover with the tax funds extracted from those same citizens by the federal government".

the campaign against the funding is quite permanent."

An investigation into abuses of the government's federally insured student loan programme, which is administered by the Department of Health, Education and Welfare (HEW), suggests that there has been widespread fraud in its implementation. This, combined with an increase in defaults of student repayments, is causing HEW to re-evaluate its attitude towards its entire student loan system.

The federally insured student loan programme in its two years' existance has disbursed loans totalling more than $8 billion to more than 4,500,000 students. The operation includes more than 8,800 colleges and some 19,000 lending institutions. Among the colleges, nearly 1,700 are vocational or other institutions run for profit.

One official estimates that the Government may have lost as much as $500m as a result of fraud and proprietary and correspondence schools appear to be the most susceptible. The questionable practices include forged signatures, collusion among federal officials and owners of colleges that operate for profit, illegal lending practices on the part of banks and deceptive advertising by some of the schools.

As these investigations continue, HEW is facing a situation where nearly one in five recipients of student loans defaults on their re-

Paraguay

The Church sets the pace

from Patrick Knight

ASUNCION

The two universities of Paraguay, the National and the Catholic, are complementary although they maintain a discreet distance from one another. The state-run National University, where about 8,000 students are enrolled, tends to be restricted by the severe political constraints of the 20 year-old Stroessner regime, while the Catholic University, only 15 years old, sets the pace in action and ideas. It is regarded with considerable suspicion by the government, which has been in confrontation with the Church over several important issues for many years.

Neither university is really complete. The National is alone in offering courses in the exact sciences, with medicine, civil engineering, chemistry and pharmacy, agronomy and veterinary science among those available. Entry to these faculties is severely restricted, however, and only about half the applicants get places. As a result, 45 per cent of the students of the National are forced to attend courses in only three faculties, those of law, humanities and philosophy, where entrance is much easier, while all the 4,000 students at the Catholic University are in these disciplines. These subjects are taught in the evenings alone at both institutions.

There is considerable pressure on the National University at the moment to expand the number of places available in the technical and scientific disciplines, and there is as yet no other institution in the country where those who have completed secondary education can get any sort of training.

Those who complete secondary education are still only a tiny proportion of pupils. Only 26 per cent of those who start primary school at the age of seven or eight finish the six year course, though numbers are growing fast, and have doubled in recent years. In 1962, for example, only 12 per cent of primary school starters finished the cycle.

What students can aspire to at the universities is still very limited. Only civil engineering is offered, no mechanical, electrical or electronic courses being available, despite the fact that, within a decade, Paraguay will be one of the largest producers of hydro-electric power in the world. This is the first year that agronomy has been an independent faculty—until now it has been a subsidiary of veterinary science. Each of these two faculties will accept about 75 students this year.

Despite its lack of funds (the church in Paraguay is one of the poorest in Latin America and is not an important landowner) the Catholic University has been one of the most dynamic institutions in the country in recent years, notably since the appointment of the present rector, Padre Juan Usher.

It has made considerable efforts to prepare itself for the avalanche of change which will occur in the next decade, change the National University and the authorities have preferred to ignore. Paraguay will undergo an upheaval in the next few years with up to 10 per cent of the 2,500,000 population moving to currently almost unpopulated parts of the country. Construction is now beginning on the border with Brazil of the largest power station in the world, Itaipu, to be followed by another similarly large scale project with Argentina, Yacireta.

The ruling elite, and with it the authorities of the National University have tended to try to prevent change as a technique of maintaining themselves in power, and are still uncertain as to how to treat the hydro-electric projects. Almost no planning has been done at any level, although the Brazilians started preparing for Itaipu 30 years ago. The brain drain has been a very severe problem for Paraguay, and when 80 engineers were called for to work on planning Itaipu, only 25 could be found in the country.

It is estimated that there are 15,000 Paraguayan students at universities in Argentina, yet it is doubtful whether the government will encourage qualified Paraguayans to return to work on the hydro-electric projects, fearing the consequences of a return of people with very different perspectives from those who have remained in highly controlled Paraguay. At least 1,600,000 Paraguayans live in Argentina.

In these circumstances, the planners of the Catholic University set to work two years ago to produce a study which would attempt to redirect the university in the context of the changing national reality. When it first opened, the university tended to offer the traditional courses, and a law school was the first to open. Now it is trying to curb the growth of traditional careers, and, within the tight financial limits imposed on it, develop courses more relevant to the Paraguay of the future.

There is already a considerable problem of philosophy and humanities graduates being unable to find appropriate employment, so emphasis will be put on providing technical courses, and shorter courses leading to intermediate qualifications. The planning work has been given as much publicity as possible, with many public sessions, in an attempt to focus public opinion on the problems, and stir the authorities to taking some action.

Entirely dependent for finance on student fees, now some £50 a year, the university is not in a position to extend far from liberal studies. It would like to obtain extra funds from the government, but remains fearful of the price in a reduction of freedom of action it might be forced to pay as a result.

Except for mathematics and Spanish, where fairly simple selective tests have to be taken, the Catholic University does not have entrance examinations. All students share a common foundation year, during which there is a process of selection, and by the end of which between 30 and 40 per cent of entrants have dropped out. About 30 per cent of the intake finally graduate. Some 350 of the 4,000 students have their fees fully or partially paid by the Catholic University which now runs subsidiary centres in three small Paraguayan cities, Concepcion, Encarnacion and Villarica, as well as Asuncion. The National University is concentrated in the capital.

The intake of students in the competitive faculties, such as medicine and engineering is still very heavily weighted in favour of pupils from the few private schools in Asuncion. Nine out of ten applicants from the best girls' school in the city were accepted for pharmacy in 1974, for example, whereas only two out of 20 applicants were accepted from schools in the interior.

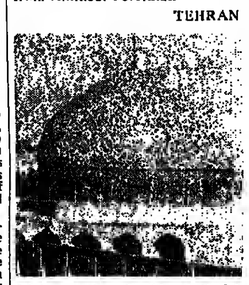
As no grants are available only those with means can be full-time students, and thus attend the faculties of the exact sciences during the daytime. Large numbers study liberal subjects at the National or are enrolled at the Catholic who would prefer to be enrolled in exact sciences faculties. For this reason, many students go to Argentina, where access to courses is generally unlimited. The Brazilian government gives some grants each year, but the high cost of living and language problems in that country mean that the mass of independent students still travel to Argentina, most never to return.

Iran

Not enough lecturers but too many students

from Annabel Ferriman

TEHRAN



Isfahan : the Sheikh Lotfollah Mosque.

In many ways the problems of Iranian higher education are the exact opposite to those of Britain. Instead of too few young people wanting to become students, Iran has too many and instead of too many graduates looking for academic jobs Iran has too few.

Although the number of students in Iran has increased almost 200-fold over the past 45 years, from about 700 before the war to 135,000 now, demand for higher education far outstrips supply. For the 17,000 or so university admissions every autumn, there are about 150,000 applicants, making a 9:1 ratio of applicants to places, compared to the two to one ratio in Britain.

This has resulted in very high student/staff ratios and considerable pressure from the government on the universities to increase their intake. At Isfahan University, for example, in the modern languages department there is a 20:1 student/staff ratio among English majors and a 30:1 ratio among those taking English as a minor. The government have also insisted that the university admit students at the beginning of the spring semester as well as in the autumn, to double its intake.

To meet the high student demand and to produce much needed trained manpower, Iran has plans to increase its student numbers by 44 per cent over the next two years, from 135,000 to 196,000, largely by means of setting up seven new universities.

These will include the Free University of Iran, the approximate equivalent of Britain's Open University, and the Reza Shah Kibur University, the all-graduate English-medium research institute being set up at Mazandran on the Caspian Sea under the auspices of Harvard University.

Other universities are being established in Hamadan and Kermanshah in the north west, in Yazd in central Iran, Kerman in the south east and in Baluchistan on the Gulf of Oman. The government also intend to expand many of the existing universities, such as Shiraz, which is to grow from 4,258 to 8,000.

The chief problem the government have to overcome in trying to achieve such rapid expansion is that of personnel. There is an acute shortage of suitably qualified and trained staff in the universities, due partly to the level of university pay and partly to the fact that well-qualified Iranians tend to emigrate to the West.

Dr H. Safavi, the director of the centre for educational planning in the Institute for Research and Planning in Science and Education in Tehran, explained that up until recently the comparatively low pay in the universities has not mattered: there were plenty of applicants for jobs because of the prestige. "But now that the country is undergoing a social upheaval and the private sector is enjoying as much prestige as the public sector, there is little attraction in the job."

The problem of finding enough trained staff for the universities is being tackled by a variety of methods. The setting up of the all-graduate Reza Shah Kibur University is one way in which the government are trying to persuade coming home for, and will enable many of them to acquire the postgraduate degrees necessary if they want to rise above the position of associate professor.

Another method is the Special University Scheme for postgraduates set up in 1972. Under this, the Iranian government offer scholarships to young academics to do their MSc or PhD abroad. They are paid the university salaries plus an extra allowance, and in return they are obliged to return and stay for at least twice the length of time of their postgraduate course. The British Council placed 40 of these postgraduates in Britain in the first year of the scheme and state that it is working well.

Finally, there is an increasing number of exchange agreements for staff and students between Iranian universities and those in Britain and America. Pahlavi University at Shiraz, for example, has exchange programmes with the University of Pennsylvania, Kent State University and Massachusetts Institute of Technology, while Isfahan University has agreements with the Universities of Texas and Durham.

The dramatic expansion in student numbers and university courses is not going to take place hopefully. Manpower planning needs are going to be the first consideration. Thus technological and social studies courses are going to be expanded the most rapidly to try to provide the economists, agriculturalists, sociologists and anthropologists that the country needs.

Courses to train para-medical personnel are also sprouting up all over the country. Until now, Iran's medical training was very much modelled on Western lines, with the result that many students, once qualified, emigrated to the West. It has been estimated that while Iran has 11,000 doctors for its population of 32 million, there are about 8,000 Iranian doctors abroad—4,000 in America, 2,000 in West Germany and 2,000 in the rest of the world.

Pahlavi University in Shiraz, because it is English-speaking, has a particularly high emigration rate, with well over half the doctors it trains seeking employment abroad.

To tackle this, the government have declared that any student who is prepared to stay in the country for twice the length of his course will have free tuition. Otherwise they will have to pay the economic cost of his course. Since this is estimated at about £4,375 a year for medicine, it is likely to slow down the emigration rate dramatically.

On top of this, there is a drive to train para-medical personnel for the rural areas, which are acutely short of doctors at present.

Courses for medical auxiliaries are to be offered on a large scale by the new College of Health Sciences on the outskirts of Tehran. This college, which took in its first class of about 100 last September, has a unique seven-year curriculum.

Students start with basic courses in science and the humanities. As time goes on they will branch off into various disciplines, starting with medical auxiliaries, (who only require three to six months of training, after which students will return to their villages to tend minor health problems and supervise public health activities) nurses, medical technicians, physicians' assistants and finally, for those who stay all seven years, fully-fledged doctors.

Another new university, which will be geared to providing medical personnel for the villages, is that of Kerman. This university, which will open in September, is to incorporate a health college, providing four-year courses biased very much towards the practical side of medicine. The students will then go out to clinics in the rural areas for two years, both to supplement their training and to provide much needed personnel. They could then return for two years to become fully qualified doctors.

Thus Iran's aim is both to expand education and adapt it more to the country's needs, and although university staff are now being recruited abroad and junior staff being sent to the West for their post-graduate work, it is obvious that Iran will more and more have to develop its own facilities for staff training with these aims in mind. The next 10 years in Iran should see a boom in

Comecon

New institute will research in management

by I. V. Chak

Prime Ministers from the nine Comecon countries have decided to establish a Comecon Institute of Administration and Management, and have asked the Comecon Committee for Science and Technology to proceed with its organization.

The main objectives of the institute will be to carry out research in the field of administration and management and to provide suitable and relevant administrative and managerial training for the increasing number of posts in Comecon organizations, standing committees, research centres, joint enterprises, and banks.

Students are released

JOHANNESBURG

Seven Africans and Indians who were among a number of members of the Black South African Students Organization (Saso) and related organizations detained by the security police nine months ago and held part of the time incommunicado have now been released from prison.

They were arrested at the end of September during a banned demonstration in support of the former Mozambique Frelimo guerrilla organization, whose members have now

France

Shot in the arm for Pasteur Institute

from George Morgan

NICE

A massive increase in State aid to the privately-owned Pasteur Institute in Paris has recently been decided by Madame Simone Veil, Minister of Health, after months of anxiety about the future of France's most prestigious medical research centre. For 1976, State funding will amount to over 48m francs (£5m), an increase of 25m francs. It is expected that the grant will be received in 1977.

In the short term, the increase in State funding should allow the institute to solve the problem of its chronic annual shortfall. Last year, the research centre announced a loss of £14m. By 1978 the accumulated debt was expected to reach £7m.

In future years, increased production and more efficient management at Pasteur's industrial plant at Louviers should help to put the institute in the black for the first time in over a decade.

The new grant is said to be in payment for some of the services provided by Pasteur in the field of research, teaching and medical care. Among other features, the institute runs 11 documentation centres in France and abroad, and keeps a permanent stockpile of serums and vaccines for use in national epidemics. Research is the field which will benefit most from the increase. An additional £14m will bring the State contribution in this area to an annual £4m.

In addition, the government have help with the renovation of the somewhat run-down premises on the Pasteur campus. This means that contingency plans drawn up by M Jacques Monod, the head of the Pasteur administration, to move the entire complex to a new site in the suburbs have now been shelved.

Another feature of the new capital grant is that the donation of £750,000 made by Sir Max Rayne in 1972 towards the construction of a new Immunology block will now be used. Sir Max made the gift conditional upon French government participation in the scheme. Top priority is now being given to the building which will include a vast underground animal house. Any additional finance required for the project will be raised by the sale of unused land on the Paris campus.

Fears that Pasteur's jealously-guarded administrative and scientific independence would be sacrificed were allayed when Madame Veil gave assurances that the State would not interfere in the running of the institute. The Minister also said that Pasteur's unique structure combining a research institute and an industrial production plant would remain unchanged.

Malta education

An article on the reorganization of higher education in Malta (*THES* July 4) wrongly stated that the women's college is owned by the Sisters of St Joseph. It is in fact

TIMES PAST THE TIMES

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The wisdom of waiting for a peaceful solution

It is now a virtual certainty that the University of London will not submit a private Bill to Parliament this autumn to enable it to carry out major constitutional reforms. The university's senate wisely voted last Wednesday for a moratorium to allow more time for the governing bodies of the schools and colleges to consult their members and make comments on the draft Bill.

The draft Bill at present being circulated would free the university from one important section of the University of London Act, 1926, enabling the university to change its constitution subject to the safeguard that senate must circulate a copy of any new statutes to the court, convocation and the governing bodies of the schools three months before making them and consider any representations made by these three bodies.

The major changes which the university is seeking to make, and which the present draft Bill would allow, are to make the vice-chancellor the full-time salaried academic and administrative head of the university with a possible eight-year term of office, with the principal responsible to him. At the moment the academic and administrative functions are separate.

Another change which the university has already made within its own powers has already given rise to grave misgivings in some quarters. This is the formation of the joint committee of the court and senate for collective planning (JCCP), a body of 16 people chaired by the vice-chancellor and including the principal, six heads of colleges and four senior academics. It is underpinned by a committee sub-structure designed to secure full academic and collegiate consideration of collective development proposals.

As defined by the university's second consultative report on the 1972 Murrey report, the JCCP would have a pre-eminent role. Broadly speaking it would advise the court and senate on quinquennial submissions, academic priorities, new academic developments affecting other schools or involving major additional finance, and initiating, considering and co-ordinating proposals for rationalization and inter-collegiate cooperation within the university.

However, the terms of reference of the JCCP are now under review. At the last senate meeting it was accepted that the JCCP could operate as an advisory body and it was said that there was no intention it should have any executive powers. How the major colleges will react to whatever central planning unit emerges will depend very much on what powers that body is given.

The arguments advanced by some of the heads of the major colleges in favour of making the vice-chancellor the full-time academic and administrative head of the university, and for having a strong central planning unit, are clear. There is a need for continuity at the top of the federal structure, and the post of vice-chancellor should be occupied by an academic conscious of the implications of major academic decisions.

He should also be the administrative head, since, subject to the agreement of court and senate and the advice of the JCCP, he must make the major decisions on the allocation of resources and put quinquennial submissions to the University Grants Committee. It is reasonably swift response to inquiries from the Department of Education and Science and the UGC.

They argue that the JCCP, far from increasing the power of the centre at the expense of the schools, will draw the schools and other bodies into the centre of decision-making, where they can make their pleas for grants, argue out major financial decisions affecting the whole university, and influence quinquennial submissions.

Yet if it is to work, the JCCP must be a genuine consultative body. It must not make speedy written decisions but should, as one head believes, tour the colleges, schools and other bodies and discuss the problems with them.

Will it do so? Far opponents of the constitutional reforms an ominous note was sounded by one paragraph of the university's second report. "Another practical problem for the JCCP arises from the fact that the university absorbs such a large proportion of the UGC's financial allocation to universities and that the UGC therefore requires from the university not only comprehensive but quick replies to many questions which arise in relation to forward planning in university education nationally. As a result, it has to be recognized that external constraints of this kind will sometimes impose stricter limits on the breadth of consultation, however desirable it may be."

Opponents of the proposed changes argue that if the JCCP is to have a major role in the decision-making process, its role is far too great and will damage the autonomy of the schools where the teaching takes place and where academic decisions ought to be taken.

They also argue that the proposed changes have been encouraged by the DES and the UGC, and point now to Lord Croivther-Hunt's stated intention to limit postgraduate work, reduce staff-student ratios, promote certain disciplines at the expense of others and influence student choice, as well as the increasingly interventionist policy of the UGC and the DES.

The UGC, they say, has ceased to be a buffer between the universities and the DES, and is issuing clearer and stronger directives to universities. If London University is required to make different and more important representations to the UGC, rather than simply a plea for a block grant, and if the UGC is to make heavier demands on the university, the power of a federal university, even strengthened by a central planning unit to resist these changes, will be severely limited.

They add that the UGC wants to be able to deal with a central body strong enough to control the schools, and that the schools will not be able to protect their institutions from the pressures exerted by the DES and the UGC.

More fundamentally, the argument is simply that the university ought to resist the strong demands made on it by the UGC and the DES. They believe, as Professor Ralf Dahrendorf, director of the London School of Economics, has said, that such pressures will damage the quality of university education.

Given these conflicting views, which were sharply brought into the open by the Privy Council's decision to disallow the university's proposed new statutes, the senate was wise to vote for a delay which will allow time for thought and discussion about the real aims of the university. There must be a great deal of misapprehension on the part of the ordinary university teacher about the nature of the proposed changes, and there is still in some quarters serious disquiet about them. A

LETTERS TO THE EDITOR

Academic publishing

from Mr John Rear

Sir,—Dr Ursule Henriques (*THES* July 11) suggests that the seriousness of the crisis in academic publishing is not appreciated by senior academic and administrators. I am sure this is generally true, although those few lecturers who attended the National Book League conference on books and undergraduates at the beginning of the month should now be in no doubt that the position is indeed serious.

However, the Society of Public Teachers of Law has for some time been aware of the possible implications for legal scholarship and education of the current economic situation and early last year the society established a working party, under the chairmanship of Professor William Twining of the University of Warwick, to investigate the situation.

The working party realised very early on that many of the problems with which it was concerned were not peculiar to law but were problems of concern to all academics. It was for this reason that it moved the NBL conference to ask its various sponsorship bodies to consider the establishment of an inquiry at the highest level into the problems of academic publishing and their implications for teaching and research in higher education.

The working party hopes that, among other issues, the inquiry would make a complete reappraisal of the prevailing principle that funding bodies, both private and public, sponsor research but not publication.

We are now in a situation in which the chances of the results of a research project being published to its appropriate audience are greatly diminished. Many may feel that the purposes of sponsoring research will be defeated unless support is also given to enable the results to be published where those results are important.

In your leader (*THES* July 11) you suggest that the situation is "unlikely" but not yet one of crisis. In fewer books published you see a "useful breathing space" for reappraisal of academics' attitudes towards the nature of course textbooks.

The evidence which this working party has been receiving suggests that your attitude may be slightly too complacent. The working party does not share the view that on the whole market pressures are a good indicator of academic worth and ability.

In the words of one leading publisher who gave evidence before us, "the scholarly monograph has had it". And as to textbooks, all the evidence suggests that it is precisely the book which is in the growth areas, where the subject is important but the market small or which is innovatory and which tries to explore the subject in a different way, that will go to the wall as the publishers retrench and put their available capital into books where they are quite certain a market exists and which is big enough to give them a rapid return on their investment.

Dr Henriques asks for a rescue operation. The SPTL working party hopes that as a start academics will support the call for the full inquiry which it has urged.

Yours faithfully,
JOHN REAR
Secretary, SPTL working party on law publishing,
University of Kent.

Closures

from Professor D. W. Barron

Sir,—The suggestions by Dr Robert Hunter and Mr Jo Grimond (*THES*, July 18) that it might be necessary to close down some universities and/or polytechnics have aroused predictable reactions, but we should not dismiss their suggestions merely because they are unpalatable. It is better to "think the unthinkable" and explore the possible consequences of the present financial situation.

Dr Hunter is surely mistaken in asserting the a priori right to survival of "the great civic universities". They do some things very well, but I can think of subjects in which the reputation of Birmingham, say, is somewhat less than that of an upstart new university.

If it is the case that there is not sufficient money available to keep the universities going as they are at present set up, then rather than close some down would it not be better to consider some sort of rationalization?

It seems to me that we should start by giving up the proposition that all universities should teach (almost) all subjects. In considering rationalization along these lines one would obviously look hard at departments that have consistently failed to attract a sufficient number of adequately qualified students.

However, it would be equally important to look closely at departments (particularly in science and engineering) that are too small to be viable in research. The commitment to research is the one distinguishing feature that sets universities apart from other forms of higher education, and in my own subject of computer science at least, it is clear that most of the worthwhile research comes from the larger groups.

Unlike Dr Hunter, I am not making these suggestions from a position of assured security. My own group is small, and would be a candidate for rationalization. However, I would rather be out mauling the lifeboats than back in the ballroom, listening to the band playing "Abide with Me" as the ship founders.

Yours sincerely,
D. W. BARRON,
Professor of computer studies,
Southampton University.

University reforms

from Professor John Fletcher

Sir,—What a delightful sense of fun Professor Hammerton displays! (*THES*, July 11). I am sure most of your readers will have noted with a touch of envy the unobtrusive but unmistakable protuberance of the tongue in his cheek in the best tradition of common room *pince-nus-rire* banter. Indeed colleagues in English departments (foremost among those to be wound up "as soon as convenient") will have savoured the aptness of the professor's allusion in his opening sentence to Dean Swift's scarcely more provocative *Modest Proposals* for dealing with the Irish population explosion in the 18th century . . .

But why stop short at Hammerton's remedies for our current ills? Why not get rid of all but two departments of psychology, on the grounds that mental illness and mass unreason are on the increase despite the existence of so many experts in this subject? Or all but two departments of economics, on the grounds that the bald simplicity of £6 a week flat owes nothing to the subtleties of econometrics? Or all but two departments of modern languages, on the grounds that their efforts do not appear to have advanced the growth of international understanding one iota? Or all but two departments of physics (or biology, or chemistry), on the grounds that they are responsible, however indirectly, for the Armolite rifle, bacteriological weapons and gelignite?

Need I continue? As Swift knew only too well, some matters are too grave to jest about (and I do Professor Hammerton the courtesy of assuming he *was* joking). Readers who are not amused will turn instead to the constructive suggestions offered by Ivor Crowe in your same issue, and to Peter Conrad's much needed rebuttal of current nonsense about the "uselessness" of university subjects in the June *New Review*.

Yours faithfully,
JOHN FLETCHER,
Professor of comparative literature,
University of East Anglia.

from Dr John Rodford

Sir,—"Modest proposals" remind us of Swift's, so that one is not entirely sure how serious Professor Hammerton is. Psychologists may feel inclined to restrict the teaching

East Anglia students

from Mr Brook Albrighton

Sir,—It was something of a surprise for us to read (*THES*, July 11) that a whole department at this university apparently had no students to teach in 1971-72, and even more of a surprise when I discovered that this department was agriculture and forestry.

UEA has no such school of studies, so who could this mysterious group be? Investigation has revealed that four were then members of the School of Social Studies (agricultural economists) and one was a member of the School of Environmental Sciences (a soil scientist). These people did in fact have many students to teach although the students have found their home in a different table of statistics.

Yours faithfully,
FRANK ALBRIGHTON,

A levels, these are a poor guide: this department has known cases of two E's later welcomed, with first-class honours degrees, into "serious" university departments.

I offer two further modest proposals, one more serious than the other (the reader may choose).

First, let grants be given for one year at a time on the results of assessment each year. But let there be ample opportunity for part-time study, such that degrees can be obtained by a variety of routes. The present all-or-nothing system seems to me wasteful and inefficient.

Second, let us emulate the football league. Let departments be subject to relegation or promotion between divisions. (Departments, not institutions; such is no heterogeneous.) The binary system parallels the first class/minor counties system of cricket, for which current events at Edgbaston are no advertisement.

Further, let students be obtained by transfer. Large fees from industry for star graduates would ease the present crisis; and in turn part of these would find its way down to the hard-pressed schools.

With the advent of pools on students' performance, and "Exam of the Day" on Saturday night television, we might take education as seriously as we do sport.

Yours faithfully,
JOHN RADFORD,
Head of the psychology department,
North East London Polytechnic.

Loughborough

from Mr R. P. Hewson

Sir,—Recent developments and government emphasis in the field of higher education have lead to a curious situation appearing at Loughborough which makes apparent some of the vagaries of these events.

The University of Loughborough maintains in its full title the use of "University of Technology" signifying its origins in its development from a college of advanced technology and the emphasis is the subjects taught within it.

It is proposing to amalgamate the local college of education into the university, financing of the whole being taken over by the UGC. Would it not be a better merger to amalgamate the two to become a polytechnic?

This would enable the teaching staff at the university to be about doubled (5.8 : 1 staff ratio in polytechnics, 11 : 1 at Loughborough), for them to be better paid and with no restriction on the senior/junior staff ratio at present rigorously applied.

They would then be in a better position to pursue the type of research that distinguishes a university from other sectors of higher education!

Yours faithfully,
R. P. HOWSON,
President,
Loughborough AUT,
Loughborough University.

Correspondents should note the following guidelines when sending letters to the editor: letters should not exceed 500 words; and they should be typed, not handwritten.

Showing students the horizons of experience

Roy Niblett argues the need to retain a breadth of vision in higher education as a framework for the humane application of technological knowledge: 'We must keep in touch with life around us, and up to date with ourselves'

While the content of higher education must be closely related to students' professional needs, too narrow a concept of what is relevant to those will certainly prevent altogether the production of really adequate kinds of professional. Students in our time need to consider some of the consequences of the rapid growth of opportunities for control over other men which the advancement of human knowledge is bringing about—for example, through influencing the genes before birth; through the deliberate modification of human development by physical, psychological and sociological controls during childhood.

In the service of what concept, or "norm", of the good man or woman are such increasingly inevitable interferences to be exercised? We have clues to the norm and how it is to be sustained in, for example, the expression of man's mind in literature, music and art; the concepts of his potentialities which have been clarified or illuminated by philosophic and theological speculation; some of the scientific hunches and mathematical and medical discoveries of the past 200 years.

But to follow these clues requires in the student a developed sensitivity and imagination, some sense of history, a capacity to judge human nature which has been informed by experience gained interrelatedly from life and books—neither being enough by itself. It requires that he shall not be a specialist only, although unless he knows from experience what being a specialist means he may fail to reckon adequately both with what specialist advice can contribute and with what it cannot.

It also requires that he should be able to introspect, and in arriving at his final decision be able to estimate more or less rightly the relative importance of the factors, moral as well as physical, which are contributors to the evidence. Only in this way will he be able to counter the essential technological threat: that of going further and further ahead with little concern for the direction in which we are going.

'The first need is for a frequent realisation, in some humility, by both teacher and taught of their common limitations as human beings'

The first need is for a frequent realization, in some humility, by both teacher and taught of their common limitations as human beings. One of the astonishing things about life for all of us is that we have to submit to happenings, sometimes of the greatest importance to us, without our being consulted at all.

Our birth—in what country or what century—was not of our choosing. We were never asked what sex we wanted to be. And all sorts of developments have their way with us without our being able to do much to stop them, or even make their onset faster or slower: the coming of adolescence, for example, or middle age or old age.

In spite of what all the advertisements say, we can control only a little how pretty or handsome or ugly we are. Birth and death, looks, illness, disablement, are all unasked for; neither wholly prophesiable nor fair. But some things we can do—and must do: keep in touch with life around us and keep up to date with ourselves.

These are primary conditions for fruitful experiencing. And without experience we can never become experienced or stay so. To sense, to love, to enter into things, all are conditions of understanding and conditions of being properly human; and there are no short cuts.

Most teachers in higher education need more humility than they have. "There are any number of attachments students could form", says Jon Rouah, "and who am I to say that they should spend their time falling in love with Chaucer rather than Shakespeare or biophysics or dogs or one another? Such loves are mutually exclusive . . . to *teach* usually means to act like an inviolable expert whose task is to put his students through his paces. . . . What right do I have to teach Chaucer? What right do I have to tell adults past the age of consent what they should know or who they should love? I refuse to accept the notion that I have the right because Chaucer is good or because I know more than my students, or because they will be grateful to me subsequently. If I went to work within a dialectical tradition, there seem to be only two conditions under which I have the right to teach anyone anything: when he asks me to, or when a community of which he is a member agrees that whatever I am teaching is something ha should learn."

Such modesty is a good starting point.

Secondly, it is important that students should come to recognize at least something of the significance of the past. Human life did not start in 1964 or even in 1954. Reading novels may help; so may dipping into the history of science; so may travel to other countries, or within one's own.

Also important, though, are exercises designed to help people to find again memories of what has been influential in the past of their own lives; such memories have a far wider range than education normally focuses upon or uses.

Men are often very out of touch with themselves. Scholars and scientists are fathers and mothers, too; maybe they are themselves interested in or concerned about music, or religion, or archaeology, or politics. Everyone knows, as his half-remembered dreams reveal, much more than he is normally able to recall.

Practice in recollective introspection—in the deliberate recollection in tranquillity of past experiences, some of them tinged with emotion—can be a deepening and unifying element in life. Such personal entering into one's own heritage can bind an existence together which otherwise appears made up simply of a miscellany of parts, each disparate and often superficial in meaning.

Much university study, perhaps inevitably, tends to have an opposite effect: to ensure that students are always observing, theorizing, deducing, calculating, anticipating consequences. Each of these is an important exercise, but if the concentration is wholly upon them the effect is to ensure that students postpone even the present moment instead of entering into it. They never indeed really enter into anything.

There is, of course, undeniably a need also for them to practise taking a detached, critical stance. It is necessary for them, however, to realize that neutrality is of no use as a permanent frame of mind. It is easy to deceive oneself into thinking that if one has observed a phenomenon with clear exactitude one really understands it and can explain it. But it is only in a very limited sense of the word that explanation is possible.

Birds winging their way west in the late summer may, as we look at their flight, evoke a feeling response in us, "They know not why they are flying on and on in the shape of an immense V". A more neutral response might be, "They are obeying a group-motivated, instinctive drive". Neither comment is really an explanation. Both may be correct, the one being a more internalized, emphatic response that the other.

What is important is that students should be able to exercise both frames of reference. They need to be able to accept their own feelings and thus "come into their own"; but also to be objectively observant. A curriculum that is to serve the future needs both elements firmly within it. It must use scientific and technological knowledge for a social future that will really be *worth* living in.

This is one of the justifications either for introducing into the curriculum some interdisciplinary studies or for enlarging the content of specialisms so that more attention is given to the social consequences of the subject one is studying. Students need to be jolted out of a pleased satisfaction with piecemeal, one-subject analyses and made to feel their limitations.

Interdisciplinary studies can sometimes build a bridge between conceptual knowledge and action in the world; sometimes they can fertilize specialisms afresh, making them big with a newly perceived relevance. Extreme specialization, as Leo Marx allows, may be an effective way to train students for particular jobs, but, as he goes on to say, "it does very little to prepare them for winning the struggle for racial justice, or for stopping unjust wars, or for coping with

Inherent in many interdisciplinary, mission-oriented studies, no doubt, are assumptions about the direction in which society ought to develop and what "missions" are really important. There is a moral element concealed in some of them of which we very clearly ought to make ourselves conscious, and of which there is no need to be ashamed.

Men may be building a civilization with a high floor of creature comforts, but if it has a low ceiling of aspiration they are trapped by it as much as if they were living at some earlier stage of history.

Many experiments in fashioning coherent curricula with interdisciplinary elements in them have been made in universities in the Western world during the past 50 years. Among the more notable, perhaps, have been those fashioned in the later 1930s at Chicago and Annapolis, in the 1950s at Keele and Antioch, in the 1960s at Sussex, Santa Cruz and Vincennes, and now in the 1970s at the Open University in Britain, at Evergreen College and the University of Wisconsin—Green Bay.

In many universities, however, and in some of these, the power of specialist departments understandably and rightly remains strong; but they have tended to suspect any mixing of disciplines which gives, or appears to give, them a reduced role. Nor have they seen it as appropriate for the university to perform a missionary task in society generally.

Our own period is marked by three phenomena which put a question mark in the minds of students as well as those of other people against this kind of conservatism.

First, it is becoming painfully obvious that man is using up the world's resources at a reckless pace. Hence his looking towards universities for responsible help in meeting a dilemma which is increasingly pressing. Such help requires interdepartmental cooperation, must notably at the postgraduate level, where centres of study can bring diverse disciplines into close and fruitful contiguity.

Second, with the growth of student numbers and the emphasis placed on diversity and flexibility in course provision, binary systems of higher education have begun to emerge or, alternatively, some universities themselves are evolving so as to become more comprehensive in type.

In either of these cases a new impulse to curricular experiment is beginning to manifest itself. There is certainly a renewed recognition that the study of the curriculum, and curriculum theory, is of great importance—as important, indeed, as the study of the economics and structures of higher education were seen to be in the 1960s.

Then they were the dominant studies in the higher education field; there are now signs that the curriculum area will be the dominant study of the coming 10 years. In particular, there is sharp concern that the programme followed by the individual during his higher education period should gain both in power to enrich him as a person and in social relevance.

'The study of the curriculum is now being seen as important as the study of the economics and structure of higher education was in the 1960s'

Third, there is increased questioning about where research, technical experimentation and intellectual analysis, left to themselves, may take us. Such questioning may lead, as we have seen, simply to forms of escapism: the forsaking of city life for hippy communes; the quest for religions that are reason-free; sensual indulgences that exalt the present moment over any possible social future at all.

But the significance of the sensate culture and of the dissatisfaction with too entire a concentration on intellectual analysis is not to be judged by such easy extremes. The criticism they voice comes from a deeper level.

Not long ago, Lord Ashby redefined the essence of research as "a constant exploration at the limits of understanding". That is a brilliant provocation to a new and wider consideration of our need for it. Such a capacious view of its function could restore self-respect to the humanities and give a new legitimacy to reflectiveness, contemplation and insight, clarifying incidentally the import of scientific and technological research themselves.

There can be no social future which matters in human terms unless those through whom the currents of the present are passing allow them full yet selective flow. The importance of one value as compared with another goes unperceived save by the reflective, contemplative individual.

It is upon the education of individuals one by one—of their width of consciousness, sensitiveness of mind, their resolution in thinking, and in applying thought to action—that possibilities of a worthwhile future depend. It is a touch-and-go business, no matter what the country to which our loyalties are given.

The author is [illegible]

An extract from "The Individual and the Social Future", one of a collection of essays *The Sciences, the Humanities and the Technological Threat* (ed. W. Roy Niblett) recently published by the University of

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Universities

Bath

Lecturers: Bridget Baker (biological sciences); J. A. Davos (education); R. T. Lipczynski and V. Patrovic (electrical engineering); Patricia Fosh, W. R. Seal (temporary) and D. C. Gooding (humanities and social sciences); J. S. Lowe and Eleanor Morgan (management); K. Walton (mathematics). Research fellows: A. A. S. Butt-Philip, Jean Millar (Centre for European Industrial Studies).

Bradford

Visiting professor: Professor E. M. Jope (archaeological sciences). Lecturer: C. N. Streiner (French studies); Honorary visiting lecturers: P. H. Rieck and A. F. Cox (postgraduate medical and surgical sciences). Senior visiting fellow: Dr G. Adachi (chemical engineering). Honorary visiting fellows: A. F. Amin and F. S. Zaluzla (postgraduate management and administration). Research fellows: J. Weiss (project planning for developing countries); Dr J. Brooks (organic chemistry); Dr S. G. Shenoudа (textiles).

Bristol

Director: Professor Tony Eddison (School for Advanced Urban Studies).

Durham

Chairmen of boards of studies: Dr E. J. Burrell and Professor W. P. Bridgwater (German); Dr R. A. Chapman and Professor A. J. M. Milne (politics); Professor P. Abrams (sociology and social administration). Promotion to personal readership: Dr Ian R. Macpherson (Spanish). Principal: Professor W. B. Fisher (Graduate Society, five years, re-appointed). Lecturers: Edward F. Corrigan (mathematics); Barbara C. Donnall (education); Ann L. Lascdes (theology); Robin Williams (sociology). Staff tutor: Roy E. Biggs (art, extra-mural studies department). Coordinator: Eric Cresswell (animal production research project in the Sudan, under the inter-university council homa-based scheme, until October 1977).

Edinburgh

Promotions to reader: A. J. Aitken (English language); A. Harding (history); E. M. Cliva (Scots law); R. Wynne-Davis (orth surgery); R. P. Ambler (molecular biology); B. J. Kilby (genetics); M. Anderson (sociology); C. R. House (veterinary physiology). Promotions to senior lecturers: P. R. Cooke (Scottish studies); J. N. M. Marlesn (history); G. A. Rummalls (French); W. D. H. Selter (Scots law); T. G. Baker (obstetrics and gynaecology); N. Belton (child life and health); C. M. U. Macleon (community medicine); M. C. Prestige (physiology); G. A. Clayton (genetics); A. P. Dyer and R. F. Lyndon (botany); A. H. Maddy (zoology); A. J. R. Milner (computer science); B. E. B. Moseley and I. W. Sutherland (microbiology); N. Murray (molecular biology); A. G. A. Rae (physics); J. W. Scorl (mathematics); R. F. Thow (agriculture); A. Bijl (archaeoecure); A. Jackson (social anthropology); R. Kirby (geography); G. Montgomery (psychology); W. D. C. Wright (economics); R. Brothwick (veterinary surgery); H. S. McTaggart (veterinary medicine).

Essex

Lecturers: Dr Mary Bownes, Dr D. J. Heath, Dr R. D. Jurd, S. P. Long and Dr D. Rickwood (biology); Dr R. Turner (computing centre); C. Corbett (temporary, electrical engineering science); L. Davidoff and M. McIntosh (sociology).

Heriot-Walt

Members of the Court: The Rt Hon Lord Balerno, Councillor J. G. Gray and Professor Emartus Neil Campbell. C. A. Fraser and P. H. J. da Vink (co-opted for three years). Chairman: Sir Herbert Brechin (re-elected). Dean: W. Ferris Wood (faculty of environmental studies). Lecturers: M. J. Tricker and R. H. Wightman (chemistry); J. A. Tweedie (petroleum economics); P. W. Fould (electrical and electronic engineering). Research fellows: J. T. David (electrical and electronic engineering); G. L. Geddes (pharmacy). Research associates: J. Sharp (electrical and electronic engineering); J. M. Mooney (pharmacy); H. W. Lightfoot and A. Angus (physics). Research Assistant: S. M. Vick (mechanical engineering). Assistants: R. Kolmel (German); G. G. J. Olive (French); R. Palencia (Spanish). Assistant director: M. A. Fitchen (physical recreation).

Newcastle upon Tyne

Head of school: Professor J. B. Caldwell (marine technology for five years). Visiting professor: Professor David Pleasure (neurology). Lecturers: A. Davey (applied mathematics); R. E. Kendrick (plant biology); H. Miller (mining engineering); W. S. Stewart (plant science); L. Smith (zoology); M. Wardle (temporary, social work studies). Senior visiting fellow: Professor C. Sato (mechanical engineering).

Nottingham

Special lecturers: Robert Baxter (plant physiology); J. S. Holden (zoology); Philip Porter (applied biochemistry).

Warwick

Promotions to senior lecturers: Dr N. J. Dimmock (biological sciences); A. R. Roe (economics); Dr W. W. Dinsinberre (history); M. J. A. Smith (physics); Dr D. Mervin; W. E. Paterson (politics).

Polytechnics

Leeds

Reeder: John Alfred (librarianship, redesignation; director of the newly established public library management research unit).

General

Mr Robert J. Clayton, technical director, The General Electric Co, will take office as president of the Institution of Electrical Engineers from October 1.

Dr Jonathan Daube, superintendent of schools for the Martha's Vineyard Public Schools, Massachusetts, has been appointed director of the graduate programmes in elementary and secondary education, Union for Experimenting Colleges and Universities, Yellow Springs, Ohio, USA.

Dr George Hitchings, vice-president in charge of research for Burroughs Wellcome Co of North Carolina, USA, has been elected a honorary fellow of the Royal Society of Medicine, London.

Honorary degrees

Aston

DSc:—Sir Alan Cottrell, master of Jesus College, Cambridge, and former chief scientific adviser to the government.

Kent

Doctor of Civil Law:— The Most Reverend and Right Honourable F. D. Coggan, Archbishop of Canterbury.

LittD:—W. G. Golding, author; W. T. Baxter, emeritus professor of economics, London School of Economics; L. G. Illingworth, political cartoonist.

DSc:—Professor M. V. Wilkes, head of the computer laboratory, University of Cambridge.

News

The CNAA has recently approved the addition of English literature as a main option in the BA joint honours degree in modern studies at the North Staffordshire Polytechnic. The main subjects are: economics, English literature, French or German, geography, history, international relations, politics and sociology.

* * *

The University of Glasgow has recently created a new department of taxation within the faculty of law headed by Mr Mervyn Lewis. The new department will assume the responsibility for teaching at both undergraduate and postgraduate levels and will aim to further taxation studies, particularly in relation to fiscal policy and public finance.

* * *

A new research unit in ecological physics has been opened at the Cranfield Institute of Technology. Its interests include insect migration, the management of insect populations, and natural flight. The unit will enable the institute to develop closer links with the National College of Agricultural Engineering at Silsoe, which becomes part of this institute from next month.

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The University of East Anglia has agreed to validate three-year (ordinary) and four-year (honours) degrees for Keswick Hall College of Education in 1976.

* * *

Kent University is to hold a think-in on its future. It has set up three committees to carry out a review of different parts of the university and staff and students have been invited to submit their comments and suggestions. The three committees, on academic affairs, government and administration and the future of Kent's collegiate system will also welcome comments from the university's non-academic staff and people from the City of Canterbury.

Forthcoming events

The British Association for Commercial and Industrial Education's first summer school on education and training in England will be held at Wadham College, Oxford from August 3-10. Further details and application forms available from: Jacot Goddard, BACIE, 16 Park Crescent, London W1N 4AP. Fee (excluding VAT): £130.00 (BACIE members); £145.00 (non-members).

* * *

"Education Studios in Action", will be held at Stockwell College, Bromley, Kent from September 15-18. Full residential fee: £19.70. Information and applications from Tony Goddard, Poulton Le Fylde College, near Blackpool.

Chairs

Mrs Hilary Rose, lecturer in comparative policy studies, department of social administration, London School of Economics, has been appointed to the chair of applied social studies, University of Bradford, from October 1.

Professor Thomas A. Lee who holds the chair of accounting, University of Liverpool, has been appointed to the chair of accountancy and finance at the University of Edinburgh from August 1.

Dr John Cannon, reader in European history, Bristol University, has been appointed to the chair of modern history at Newcastle upon Tyne University.

The following have been appointed to special professorships by the University of Nottingham: Dr G. C. Brandt, animal health in the department of physiology and environmental studies; Mr Jack Edleman, applied plant science, department of physiology and environmental studies; Mr D. E. Ingsay, applied biochemistry, department of applied biochemistry and nutrition. Emeritus Professor O. E. Lowenstein, department of zoology; Mr R. E. M. McCaughan, history of planning, Town and Country Planning Studies; Mr Raymond Thompson, inorganic chemistry, department of chemistry.

Professor Willie Lee Rose, professor of history, Johns Hopkins University, has been appointed to the Harold Vyvian Harmsworth chair of American history for 1977-78. Professor Rose will be the first woman to hold the Harmsworth professorship, which has been allocated to St Hilda's College, Oxford.

Professor Howard Hibbard, professor of art history, Columbia University New York, has been appointed to the Slade chair of fine art for 1976-77.

Mr William P. Bridgwater, reader in German at the University of Leicester, has been appointed to the chair of German, University of Durham from October 1.

Professor Alan J. M. Milne, holder of a personal chair in social philosophy, Queen's University of Belfast, has been appointed to the chair of political theory and institutions, Durham University, from January 1.

Noticeboard is compiled by Patricia Santinelli and Myrna Monsurate

Open University programmes July 26 to August 1

Saturday July 26

BBC 2

7.40 Physiology of cells and organisms: Respiration and the mycoplasm (A303; prog 21).
8.00 Art foundation course: Handmade paper (A100; prog 20).
8.30 Mathematics: foundation course: Probability and probability in (M100; prog 18).
9.00 Arts foundation course: Architecture and design 1890-1939: The international style: Industrial housing and industrial design (A324; prog 12).
9.40 Technology and information: The microprocessor and its applications (T292; prog 20).
10.10 Technology and information: The microprocessor in a laboratory—a case study (T292; prog 12).
10.40 Environmental studies and people in the world: Notes 7 (T247; prog 16).
11.00 Chemistry: Enzyme curification (S282; prog 03).
11.20 Oceanography: Changing gravity (S294; prog 03).
11.40 The digital computer: The microprocessor in a laboratory—a case study (T292; prog 12).
12.15 Open forum: Philosophy: Behaviour control: Freedom and morality (A305; prog 09).
13.05 Decision making in British education: Alternative high school (E282; prog 06).

RADIO 4 (VHF)

8.00* Mathematics: foundation course: Probability and probability in (M100; prog 18).
8.20* Technology and information: The microprocessor and its applications (T292; prog 20).
8.40* Science foundation course: Industrial pollution (S100; prog 23).
9.00* Open forum: Philosophy: Behaviour control: Freedom and morality (A305; prog 09).
7.00* Urban education: The community.
7.20* Elementary mathematics for science and technology: Revision (M150; prog 01).
7.40* The development of musical instruments and their music: Domestic keyboard music (A301; prog 12).

BBC 1 (VHF)

Reading: North Scotland and parts of Wales)

9.05 Quantum theory and atomic structure: Electrons in energy in quantum theory (S434; prog 04).
9.25* Chemistry: Organic processes: Rates of unimolecular reactions (S282; prog 04).
9.40* Science foundation course: Biology: The nuclear explosion (S100; prog 24).
10.10* Arts foundation course: Wilson Wyatt: Two houses (A324; prog 04).
10.25* Mathematics foundation course: Probability and probability in (M100; prog 18).
11.00 Humanities and information: The music explosion and the reformation (A207; prog 1; prog 02).
11.20 Personality, growth and learning: Three views of Stella (E281; prog 12).
11.40 Art and society: BBC and World War II: The Home Front (A301; prog 12).
12.00 Decision making in Britain: Models of decision making in Britain (E205; prog 06).
12.00 Age of revolutions: The Royal Academy and English history painting (A321; prog 01).
12.20 Urban development: Crime in Chicago: Problems of juvenile delinquency (D282; prog 03).
12.40* Adolescence: Adult years and daily life (E262; prog 06).
12.40* Mathematics: Oscillations (M352; prog 02).
13.20* Structure, bonding and the periodic table: Electrons in the chemical industry (S282; prog 05).
13.40 Decision making in British education: Alternative high school (E282; prog 06).

RADIO 3 (VHF)

(Additional programmes for North Scotland and parts of Wales)

24.00* Renaissance and reformation: The music explosion and the reformation (A207; prog 1; prog 02).
00.20* Age of revolutions: The Royal Academy and English history painting (A321; prog 01).
00.40* Art and society: BBC and World War II: The Home Front (A301; prog 12).

Sunday July 27

BBC 2

7.40* Electromagnetics and electronics: Electrons in pre-amplifier (S282; prog 12).
8.05* Principles of chemical processes: Rates of a gas reaction (S282; prog 04).
8.20* Science foundation course: The Earth's atmosphere (S100; prog 22).
8.40* Technology and information: The microprocessor in a laboratory—a case study (T292; prog 12).
9.40* Open forum: A magazine programme for students and staff.
10.10* Decision making in British education: Alternative high school (E282; prog 06).
10.30 Regional analysis and development: Regional and national development (D282; prog 02).
11.00 Humanities and information: Perspective: Social class (A207; prog 01).
11.25 Technology and information: Design and development: Innovation (T292; prog 04).
11.50* Technology foundation course: Transmission (T100; prog 22).
12.15 Linear mathematics: Oscillations (M352; prog 02).
12.40* Sociology and society: The Group (D101; prog 01).

RADIO 0 (VHF)

(Additional programmes for North Scotland and parts of Wales)

8.05* Structure of chemical processes: Rates of unimolecular reactions (S282; prog 04).
8.50* Structure, bonding and the periodic table: Electrons in the chemical industry (S282; prog 05).
9.10* Mathematics foundation course: Probability and probability in (M100; prog 18).
9.40* Humanities and information: The music explosion and the reformation (A207; prog 1; prog 02).
11.20 Personality, growth and learning: Three views of Stella (E281; prog 12).
11.40 Art and society: BBC and World War II: The Home Front (A301; prog 12).
12.00 Decision making in Britain: Models of decision making in Britain (E205; prog 06).
7.00* Man-made fibres: design and technology: Cheaper's product (T263; prog 06).
7.25* Mathematics: pure mathematics: Fourier (M202; prog 11).
7.40* Technology for society: Independence (T293; prog 21). Contemporary

Monday July 28

BBC 2

7.05* Systems management: Integration of information flow column (T244; prog 12).
7.30* Decision making in British educational systems: How has it been? (E282; prog 12).
10.10* Technology foundation course: High rise living (T100; prog 18).
8.30 Decision making in British educational systems: Alternative high school (E282; prog 06).
9.00* Technology and information: The spread of Lutheranism (A207; prog 1; prog 03).
9.40* The digital computer: The microprocessor in a laboratory—a case study (T292; prog 06).
10.40 Art and society: BBC and World War II: The Home Front (A301; prog 12).
11.20 Mathematics: foundation course: Vectors (M100; prog 19).
11.40 Technology and information: Social class (D282; prog 06).

RADIO 2 (VHF)

(Additional programmes for North Scotland and parts of Wales)

8.00 History of architecture and design 1890-1939: Pierre Chereau: Maison de Verre (A324; prog 10).
8.20 Decision making in British education: Alternative high school (E282; prog 06).
8.40* Environmental control and public health: Noise at the airport (T292; prog 11).

RADIO 3 (VHF)

17.45 Great Britain 1700-1900: Sources and historiography: Biography of social history (A305; prog 14).
19.02 Decision making in Britain: Business and industry (E205; prog 07).
19.25 Arts foundation course: Porcelain (A100; prog 20).
20.20 Art development of instruments and their music: Romantic period (A304; prog 11).

RADIO 4 (VHF)

6.00* Open Forum: Philosophy: Behaviour control: Freedom and morality (A305; prog 09).
5.40* The economics of urban education: Urban development: Crime in Chicago: Problems of juvenile delinquency (D282; prog 03).
18.00 Urban development: Crime in Chicago: Problems of juvenile delinquency (D282; prog 03).
16.25* Chemistry: Organic processes: Rates of unimolecular reactions (S282; prog 04).
16.45 Technology and information: The microprocessor in a laboratory—a case study (T292; prog 06).
18.05 Mathematics: foundation course: Statistics and probability (M100; prog 20).
24.00* Technology and information: Social class (D282; prog 06).
00.10* Introduction to engineering: Feedback (T231; prog 08).
00.40* Art and society: BBC and World War II: The Home Front (A301: prog 11).

RADIO 2 (VHF)

Additional programmes for North Scotland and parts of Wales)

7.30* Problems of philosophy: Extreme control: Freedom and morality (A305; prog 09).
19.00 Making sense of society: Issues in Action (D101; prog 20).

RADIO 3 (VHF)

8.30* Urban development: Crime and delinquency—the welfare of delinquents (D282; prog 04).
8.40* Urban development: Crime and delinquency—the revolution in Academy and English history painting (A321; prog 01).
17.45 Linear mathematics: Matrices (M352; prog 03).
18.05 Systems modelling: Planning models (T244; prog 12).
10.25 Language and linguistics: Phonetics (A301; prog 11).
10.40 Technology foundation course: Transmission (T100; prog 22).
10.00 Science foundation course: Industrial pollution (S100; prog 23).

RADIO 4 (VHF)

(Additional programmes for north Scotland and parts of Wales)

24.00 Reading development: Reading (A301; prog 11).
00.20* Personality, growth and learning: Three views of Stella (E281; prog 12).
00.40 Earth's resources (S100; prog 23).

Wednesday July 30

BBC 2

8.40* Comparative physiology: Physiological mechanisms and evolution (S282; prog 01).
7.05* Chemistry: Chemical gravity (S282; prog 01).
7.30* Biochemistry: Enzyme curification (S282; prog 03).
17.00* The circulation: control, design (S282; prog 02): Innovation: Game (T262; prog 12).
17.20* Urban development: Architecture and design 1890-1939: Industrial housing and industrial design (A324; prog 11).
17.00 Mathematics: foundation course: Vectors (M100; prog 19).
18.15 Decision making in Britain: Business sector (E205; Student Exercise 1).
18.40 Arts foundation course: Porcelain (A100; prog 20).
19.05 Art development of instruments and their music: Romantic period (A304; prog 11).

RADIO 4 (VHF)

6.00* Open Forum: Philosophy: Behaviour control: Freedom and morality (A305; prog 09).
5.40* Urban development: Architecture and design 1890-1939: Industrial housing and industrial design (A324; prog 11).
18.00 Decision making in British education: Alternative high school (E282; prog 06).
16.25* Chemistry: Organic processes: Rates of unimolecular reactions (S282; prog 04).
16.45 Mathematics: foundation course: Statistics and probability (M100; prog 20).
18.05 Mathematics: foundation course: Linear algebra (M100; prog 20).
24.00* Technology and information: Social class (D282; prog 06).
00.10* Introduction to engineering: Feedback (T231; prog 08).
00.40* Art and society: BBC and World War II: The Home Front (A301: prog 11).

RADIO 2 (VHF)

Additional programmes for North Scotland and parts of Wales)

24.00* Making sense of society: Issues in Action (D101; prog 20).
00.20 Urban development: Crime and delinquency—the welfare of delinquents (D282; prog 04).

Thursday July 31

BBC 2

6.40* Decision making in Britain: Business and industry (E205; prog 07).

Friday August 1

BBC 2

8.40* Analysis: integration (U232; prog 06).
7.05* Industrial data and the business sector: Models and systems (D301; prog 06).
7.40* Environmental control: Pollution: Noise: Is music noise? (T292; prog 06).
10.40* Biological bases of behaviour: Conditioning and learning (S282; prog 12).
10.40* Physiology of cells and organisms: Photosynthesis and the mycoplasm (S282; prog 21).

RADIO 0 (VHF)

6.00* Science and the rise of industrial society: Science as a social institution (D101; prog 20).
8.20* Humanities and information: Perspective: Social class (A207; prog 06).
8.40* Humanities and information: Perspective: Art and society: BBC and World War II: The Home Front (A301; prog 12).
9.40* Decision making in British education: Alternative high school (E282; prog 06).
6.40* Decision making in British education: Alternative high school (E282; prog 06).
17.45 Regional analysis and development: Government and development (D282; prog 01).
16.05 Regional analysis and development: Regional development (D282; prog 02).
16.25 People and organisations: Art (U232; prog 06).
10.20 The nineteenth-century novel and history: American innocence (A301; prog 11).
10.40 Arts foundation course: Wilson Wyatt: The Philosopher (A324; prog 06).

RADIO 4 (VHF)

(Additional programmes for North Scotland and parts of Wales)

24.00 Making sense of society: Science as a social institution (D101; prog 20).
00.20 Urban development: Crime and delinquency—the welfare of delinquents (D282; prog 04).

BOOKS

Is human violence meaningful?

History and the Dialectic of Violence
by Raymond Aron
translated by Barry Cooper
Blackwell, £6.50
ISBN 0 631 15870 7

Raymond Aron's first volume of Gifford lectures here appear in a form somewhat different from that in which they were delivered, a discussion of Sartre's *Critique de la Raison Dialectique*. He describes Sartre's book as "a sort of baroque monument, overwhelming and almost monstrous", a judgment that many who have struggled through the 755 closely printed pages will be only too willing to accept. Unfortunately the *Critique* itself has not yet been translated into English, so there may be a temptation to believe that Aron's versions of its arguments are more definitive than they are. He admits that he has written "on extraordinarily French book" and that he had to be persuaded to publish it in an English version. Part of the reason for this character is the way in which French intellectual life since the war has involved a series of public quarrels, mostly between Sartre and his one-time friends.

Aron was a contemporary of Sartre at the *Ecole Normale Supérieure* and later introduced him to Husserlian phenomaology, a fateful (or perhaps fatal) step. They remained friends during the pre-war period in spite of obvious philosophical differences. But after the war their divergences became political as well; and although their disagreement did not give rise to such public debates as those between Sartre and Camus or Sartre and Merleau-Ponty, they ceased to communicate privately. Aron refers to numerous insults and recalls that in May 1968 Sartre declared him "unfit to teach". Because he did not support the student revolutionaries. Consequently there is a tone of personal fooling running through Aron's book which will give it an odd flavour to those readers accustomed to the more objective temper of English philosophic debate.

The second feature that makes the book French in character is that Marxism, in some sense or other of that now ambiguous term, is a central issue. Aron is much concerned to see whether Sartre's views can be reconciled with any specifically Marxist doctrines. The English reader may be more interested in whether the views are true than if they fit any party line. However, this question is not just the result of the importance of Marxism in French politics, whether in the form of the old-style Communist Party or the now-style revolutionaries of May 1968, but because of Sartre's own stated aim in the *Critique* to reconcile existentialism and Marxism. The reconciliation involves, in my opinion, more a reinterpretation of the philosophic views of Marx than any attempt to rehabilitate communism, which Sartre criticizes strongly for its shallow philosophizing and failure to face intellectual difficulties.

Nevertheless, some of his political statements do sound like a defence of communist or other revolutionary parties. In so far as these are made elsewhere than in a book of philosophy, they need not concern the commentator on the *Critique*. These political pronouncements seem to indicate a love of violence and a tendency to characterize those whom he disapproves of as "dogs". Because the nature of violence is one of the constant themes of the *Critique* Aron claims that the book propounds a "philosophy of violence", by which I presume he means that Sartre in some way *justifies* violent action. I think there is some ambiguity in the position of Aron to solve is "How is human violence possible?", in other words how it comes about that man is the greatest enemy to man. One answer is that "man is naturally aggressive". Sartre rejects this because it makes human violence incomprehensible, a bare fact about man. One of the major doctrines which is carried over from *Being and Nothingness*, as Aron emphasizes, is the transparency of consciousness, that any man can, if he escapes from bad faith or other such traps, understand his actions or, as it is put in the *Critique*, his *praxis*. Sartre concludes that book with the affirmation that human violence is meaningful.

The source of this violence is the fact of scarcity; at first sight this seems an economic category, a contingent feature of human existence. Sartre comments that Marx and Engels did not give sufficient emphasis to this element but this was because they thought that it was accidental, a product of faulty social organization which would disappear after the revolution. For Marx man was, in Aron's words, ontologically social and hence opposition between men is a feature of the wrong organization of society. For Sartre man is first and by origin an individual, and the quite of the relations in terminology, this forms a continuing thread between *Being and Nothingness* and the *Critique*. In the former work, the look through which one consciousness became aware of another seems basically hostile; in the *Critique*, the existence of another practical being threatens my *praxis* and hence accounts for my hostility towards him. Aron thinks of scarcity as contingent; for Sartre it seems an ontological category, as defining what it is to be a human being. Hence there can be no possibility of its abolition by any conceivable regime. Sartre seems to fudge this issue, and Aron is too concerned to situate him in relation to Marxism to give it the detailed attention it deserves.

For Sartre the real problem is to explain how it is that men do live comparatively peacefully in societies, or rather how it is possible for them to do so. And it is here that his emphasis on the "philosophy of violence" leads Aron astray. Certainly one example of the "group in fusion" is the crowd that stormed the Bastille; here a group has, for a short time, a common *praxis*. But as individuals are the only real entities, a group's existence is precarious. To maintain itself in being an oath is necessary, with the consequent device of terror directed against any member who does not carry out his share of the group's activities. Aron takes this as proof of his thesis about violence, but does not sufficiently consider the other example of a sworn group, an amateur football team. This equally has a common praxis but hardly needs to be held together by actual or threatened violence.

In any case, groups are rare in society; for the most part men are unified by structures of the material world into series and collectives. A typical example of a series is the collection of people waiting for a bus, brought together by the exigencies of the timetable and their separate needs. Sartre seems to find this a deplorable feature of modern society. Aron rightly asks what it is that is so terrible about seriality. What need is there for a chance collection of individuals to unite in some conversation or common project? Further, could social life actually be lived at the faver hoot of the group in fusion? Sartre seems to switch from logical or ontological analysis of human relations to political attacks on existing society. This ambiguity provides Aron with the bulk of his criticisms. He suggests that at times Sartre is using what purporte to be philosophical analysis to justify his own dislikes which were formed for quite other reasons. For example, his hatred of the bourgeoisie long antedates any political commitment to Marxism, as can be seen by the remarks about them in *La Nausea*.

One difficulty for the reader of the *Critique* is to separate interesting and possibly correct philosophical arguments from political or personal prejudices. Here Aron is less of a helpful guide than he might be, other issues, such as those that might be settled by empirical investigation. Indeed there are times when he says that what is needed is sociological inquiry when it seems that the question is one which could only be settled by philosophy. Sartre argues that seriality exists because relations between men are mediated by matter, in particular by those machines that men have themselves created. The bus queue forms at this point at this hour because the service runs at fixed times on fixed routes. And this route was selected because housing had been built in one area, factories or offices in another. No doubt in the past these locations were chosen, but for any individual now they are as much given as are the laws of nature—he can only lead his life by accepting them and following their dictates.

At times it does seem that men have become the creatures of the machines, rather than machines being the servants of mankind. The worked matter that mediates between men, the whole area of the "practico-inert" as Sartre calls it, is liable to constitute a restriction on human freedom; Aron calls this the "hell of the practico-inert". This characterization might well be compared with Sartre's earlier remark that "Hell is other people". Of course life in modern society can be seen as hell and often has been by novelists and playwrights; Aron describes the *Critique* as a "sort of philosophical novel". But what is needed is a sober analysis of how far the fact of the practico-inert does restrict freedom, and, indeed, what sort of freedom we are here discussing. Sartre certainly does not do this, but neither does Aron. Although some of his criticisms of Sartre are clearly justified, all too often they do not meet the arguments at the philosophic level at which they are put forward.

An example of this is the whole discussion of dialectical reason itself. Sartre maintains that to understand human *praxis* the kind of reasoning employed in the natural sciences, analytical reason, is not adequate, so dialectical reason is required. Aron cites such laws as Gresham's as examples of regularities which can be discovered by the same techniques as the scientist uses. Sartre's objection is that this only gives a brute necessity of "things always happening in this way". For human behaviour, we need to be able to understand such a regularity, not just observe it; in the case of Gresham's law it is not hard to see why individuals react to the circulation of good and bad coinage by hoarding the former and spending only the latter. When we do realize this, we both understand the law and see the behaviour it describes as rational. Aron is happy to regard the social sciences as studying "social objects" that are amenable to sociytic investigation. The issue which Sartre raises by his use of these terms is central to the philosophy of social science, and has been much discussed in this country in a different vocabulary. A serious confrontation of the two views is obviously needed in any commentary on the *Critique*.

Aron, unfortunately, has too often barely confronts Sartre's arguments by denials or descends to name-calling. He claims, for example, that Sartre has merely rediscovered the *verstehen* of German sociologists such as Weber. That may well be the case, but it does nothing to establish or refute the usefulness of the notion. He is also too concerned about the relation between Sartre's dialectics and that of the Marxists; he even claims that Sartre is ambiguous on the question of a "dialectics of nature". I think there is no doubt that Sartre, both here and elsewhere, explicitly denies such a possibility, and consequently what he means by the term "dialectics" is very different from the kind of thing that Engels discussed in terms of the "Three Laws of Dialectics".

In sum, Aron's book is not, in spite of many incidental illuminations, an adequate introduction to the *Critique* for an audience unfamiliar with the local social scene from which it arose. On the whole it is adequately translated, though occasional passages seem to contain French, rather than English, syntax.

Typecasting personalities

Psychology and the Political Experience
by Alan Hughes
Cambridge University Press, £4.40
ISBN 0 521 20594 8

Dr Hughes is a quantifier and a behaviourist who possesses an all too rare awareness of the need to study the general and the idiosyncratic. His bank is ostensibly a statistical interpretation of political attitudes within an Australian town, but its usefulness for students of alienation, ethnocentrism, authoritarianism of the right and political tolerance, cannot be doubted.

The difficulties of constructing and testing models of psychological dispositions has to be faced, especially since it has become clear that much light can be thrown on past and present mass social movements by judicious use of psychological constructs (for example, Norman Cohn's tentative psychohistorical speculations on the origins of the great European witchhunts and the work of Dicks, Kendrick, Puxon and Pollakov published under the auspices of the Columbus Centre at the University of Sussex). The model may control or contaminate the evidence intended as a test for it, or the model may be disturbed in such a way that the notion of anything so vulgar as a "test" seems of the least significance.

Dr Hughes deals with three major psychological dispositions (alienation, ethnocentrism and authoritarianism), their interrelations, the need to provide reliable measures of them, and their connections with the generation and reinforcement of political attitudes of the right and left. He defines alienation as "an enduring sentiment of separation from the larger and smaller social environs of the individual, involving frustration, mistrust, and doubts about commonly accepted social verities". Ethnocentrism is an irrational hostility often "targeted" on out-groups. It is not a disposition reflecting a realistic appreciation of the out-group, it reflects a *stereotype* of the out-group, and the more extreme is causal antecedents, alienation and authoritarianism, the more extreme is ethnocentrism. Crudely summarized the authoritarian type is aggressive, inflexible, submissive to in-group authorities and generally punitive. Dr Hughes's central idea is the "alienation triptych", a tripartite system of dispositions with alienation as the centre-piece flanked by "anxiety" and "ethnocentrism".

He demonstrates that alienation is the primary cause of the other states and shows with considerable statistical finir that alienation generates ethnocentrism, that alienation is encountered at all levels of society and is not a simple derivative of the characteristic social experience at the lower level, and that alienation has important consequences for the way a person sees his relations.

The many illuminating features of this book make summary impossible. I found most interesting the trenchant criticism of previous attempts at the construction and testing of psychological dispositions, and the chapters in which Hughes provides newly constructed scales for measuring authoritarian personality tendency and ethnocentrism. These scales are employed with judicious idiographic interpretation to clarify the nature and origins of ethnic prejudice. In a final chapter Dr Hughes applies his scales to anti-semitism in Nazi Germany mapping out clear links between alienation due to severe social dislocation, ethnocentrism and authoritarianism. The book provides some important operational bridges between the insights of the Fromm-Adorno idiographic psychological method, and the "hard" data based on survey through interview and questionnaire.

C. N. Taylor

Keeping the faith

The Literature of Fidelity
by Michael Black
Chatto & Windus, £4.50
ISBN 0 7011 2065 7

For Ibsen's Peer Gynt, the difference between the full realization of one's humanity and a blustering, egotistical self-assertion is represented by the single, untranslateable word *nok*. Are we to be ourselves, or ourselves alone; and when is it right or wrong to dismiss other people's claims upon us? What are the demands of "fidelity"? Nowadays these topics are more commonly dealt with by clergymen, sexologists and marriage counsellors than by literary critics. Michael Black has the welcome ability to write sensitively and undogmatically both about literary works and the major questions of the moral life.

The Literature of Fidelity, necessarily, is concerned with infidelity—one of the central subjects of the European imagination. Black shows merited infidelity as the critical focus for the two conflicting meanings of "fidelity": faithfulness to one's partner, and to one's own best feelings. In a sense, he has written about the "great tradition" of adultery and marital unhappiness in European fiction, prefacing his book with a generous acknowledgment to the criticism of F. R. and Q. D. Leavis. *Phèdre* is the only work he discusses which they have not written influentially about. Yet this is a highly personal book, provocative and determinedly unacademic in approach.

Since his concern is with self-fulfilment, Black's main protagonists are the nineteenth-century novelists, and especially Dickens, Tolstoy, Emily Brontë and Lawrence. Othello and Phèdre make a pleasant, faulted for failing to realize their heroines predicaments with sufficient intensity and sympathy. Perhaps it is the literariness of Madame *Bovary* and *Portrait of a Lady* that Black dislikes. He is generally suspicious of intellectual consciousness, whether in life or in art. At one extreme, Phèdre's self-awareness is as dangerous as Othello's spontaneity, while at the other, Lawrence's characterization privilege egotism by claiming to form an ethical aristocracy free from normal constraints. Tolstoy is spokesman for the broad human position, since in Anna Karenina the adulterous and the cuckold, the happy and the unhappy couples are all shown as tied by the choices they make.

Fidelity, it seems, can never meet perfectibility or permanence. Black has a few sideswipes at more recent and permissive illusions, too. More fundamental is his discussion of selfhood. Modern intellectualism has tended to devalue fidelity by conceiving of aspects of our behaviour as alien forces. We see ourselves as prisoners of the unconscious, the libido or the life-force. But really these external forces are ourselves. We cannot just disclaim responsibility, any more than Othello should have described himself as "not easily jealous".

The style of this book is so determinedly unliterary that the word "tragedy" I think, never appears. Yet it is the sense of tragedy, and the inevitability of conflict with its risk of irreparable destruction, that Black finally affirms. Perhaps we can accept this, and leave from its moral seriousness, without being quite as much at home with the nineteenth-century novelist's view of the self as he appears to be. For (and this is where Peer Gynt might have come in) the literature of fidelity covers not merely the old stable ego, as Lawrence called it, of characters like Anna Karenina and David Copperfield, but the old Adam throughout man's history.

BOOKS

A dramatic magician

Shakespeare : The Critical Heritage, volume 2, 1693-1733
edited by Brian Vickers
Routledge & Kegan Paul, £8.95
ISBN 0 7100 7807 2

The Revels History of Drama in English, volume 3, 1576-1613
by J. Leeds Barroll, Alexander Leggatt, Richard Hosley and Alvin Kernan
Methuen, £10.50 and £4.50
ISBN 0 416 13040 2 and 03380 1

Narrative and Dramatic Sources of Shakespeare, volume 8
edited by Geoffrey Bullough
Routledge & Kegan Paul, £6.50
ISBN 0 7100 7895 1

As ruined heirs looking at these latest estimates of the conservation authorities, we may feel that our heritage for 1693-1733, as regards Shakespeare criticism, is "long heath, brown furze, any thing". To say so does not show the respect to Professor Vickers that his editorial labours deserve, but there is not much to rejoice the heart in acres of Dennis, Gildon et al arguing about Shakespeare's disobedience of the rules and his want of learning, and hectores of adaptations by the same in which they cut Shakespeare down to their own size. Ludicrously, Gildon's "beauties" are all the wrong bits—Laertes to Ophelia, Polonius to Laertes, Edmund's opening soliloquy. All the same, the misunderstandings of the age are constantly instructive. The smooth nobility of Dennis's Coriolanus throws into craggy relief the sheer ignobility of Shakespeare's hero—an ignobility which the Augustans supposed to be the embarrassing result of ignorance and crude workmanship.

"One man who does not misunderstand" is Thomas Rymer. Extracts from *A Short View of Tragedy* open Professor Vickers's selections, and, while I agree with the editor that Lewis Theobald's contributions are the soundest and most helpful, I must say that I find Rymer the hero of the volume for intelligence and readability. However outrageous his scintillating contempt, he speaks a language one can understand. One can have a decent argument with him, even agree that, given his assumptions, he is unanswerable. On Desdemona's appeal to Iago, "What shall I do to win my Lord again?"—"No Women bred out of a Pig-stye, could talk so meanly.") Whereas those who leapt so clumsily to defend Shakespeare against Rymer tend to speak a language in which critical discourse is no longer possible. ("The *Sentiments* are the next in degree of Excellence to the *Fable* and the *Manners*, and justly demand the third place in our Core and Study.")

For all the wrong headedness and repetitiousness, the impression comes strongly from this volume that they took their Shakespeare seriously in the early eighteenth century. They were trying to digest an uncomfortable genius into an inconvenient aesthetic system. They could jeer at him, excuse him, modify him, even defend him; whatever they did was a tribute to the reality of his power.

Shakespeare again causes an exceptionally difficult problem of digestion in the first volume to be published in Methuen's new history of drama in English. It covers the period 1576-1613, a prime period which is yet so dominated by Shakespeare as to make level-headed and evenly balanced history almost impossible to write. Alvin Kernan has 235 pages on "the plays and the playwrights", and he has very skilfully avoided all sorts of shoals and whirlpools, in particular the danger of producing a catalogue of anasentence evaluations. He has written a set of essays, each with a distinct theme and covering a particular segment of drama, the English history play, for example, Elizabethan comedy, early Shakespearean comedy, and so on. I do not know that it is a necessary consequence of adopting this scheme that it should be so extremely selective. There is no mention at all of not unimportant plays like *Arden of Faversham*, *A Woman Killed with Kindness*, *The Shoemakers' Holiday*. At the other extreme, there are over eight pages on *A Midsummer Night's Dream*, with too much space given to retelling the story. Matters of balance apart, it is clear that Kernan has done excellent work in showing the relationship of the major plays of the three greatest decades of English drama. His essays make a plausible coherence of the thematic progress of the plays which start with one magician, Faustus, and end with another, Prospero.

The other major feature of this volume is the hundred pages by Richard Hosley on the playhouses. He incorporates material we have had from him before, but this is the fullest study of the structure of the Elizabethan theatres so far available. Technicalities about the bressummers and prick-posts of the Swan require more concentration than readers who are primarily anxious to know what happened in the inner-stage will be prepared to give, but at the lowest estimate, this section is indispensable for reference.

Finally, we have the last volume of Geoffrey Bullough's monumental *Narrative and Dramatic Sources of Shakespeare*, covering *Cymbeline*, *The Winter's Tale*, and *The Tempest*. Our gratitude for these eight volumes is uncomplicated. Not only has the editor made life much easier for those who take pleasure in learning about Shakespeare from watching him transform the material he drew on for his plays, not only has he greatly increased the number of people who take that pleasure, but he has also brought together an incomparable library of English and European literature, mainly sixteenth century, including much that he has translated himself. Shakespeare's indifference to the literary merit of what he thought might turn into a good play makes common browsing through Bullough's volumes rich in unexpected entertainment.

Professor Bullough has come to take a wide view of his task as editor, and the present volume has a lot to say about Shakespeare's motives and aims, and on what among the happenings of his day might have prompted him to write particular plays. Some of this is rather speculative, but everyone who works seriously on Shakespeare knows the value of these introductions, and will join in congratulating Professor Bullough on bringing to a conclusion one of the most useful tasks undertaken by a Shakespearean scholar in our time.

Philip Edwards

One of those never-ending traditions

The Penguin Book of English Pastoral Verse
edited by John Barrell and John Bull
Allen Lane, £4.00
ISBN 0 7139 0610 3

The pastoral tradition in English poetry extends from the Elizabethans to the twentieth century and has produced a great variety of poems and dramas, from the simple idealization of an imagined rustic golden age at one extreme to harsh exposures of the realities of peasant life on the other, with a wide spectrum of satirical, elegiac, contemplative, nostalgic, descriptive and other modes in between. An adequate anthology of such poetry is therefore bound to be rich and varied, and this collection has these qualities. But it must have other qualities too if it is to prove both interesting and illuminating to the reader. It must avoid the dangers of so much pastoral poetry, and—if it is arranged, as this one is, in chronologically ordered sections with a critico-historical introduction to each—it must provide some adequate explanation and interpretation of the different ways in which poets have used the pastoral tradition. It is with respect to the latter provision that this anthology is most vulnerable.

Barrell and Bull are anxious to provide brisk socioeconomic explanations of the various uses of pastoral, but their explanations are altogether too simplified and, in a cursorily "progressive" way, moralistic. "For the pastoral vision is, at base, a false vision, positing a simplistic, unhistorical relationship between the poet's patrons and often the [illegible] nization." If that is what the pastoral vision is, at base, why bother with it? Or why bother with those pastoral poems of Wordsworth in which "the whole basis of Wordsworth's pastoral is demolished by a feeling of harmony with nature as a trance-like state, which can be achieved only by silence, by an annihilation of rational speech and thus arguably of one's very humanity"?

The variety of the selections contradicts the editors' simplified chat about "social mobility". For they have run together under the same term "pastoral" a number of quite distinct literary forms and moods, which cross the pastoral tradition at certain points but more often diverge from it. There is, for example, the "Great House" poem, so conspicuous in English poetry from Ben Jonson to Keats: this is a kind of poem about social order, about human organization and human relations, about the place of pattern and elegance in work and play, and derives (or is related to) a serious concern for society: Jonson's "To Penshurst" (included here), Marvell's "Upon Appleton House" and Yeats's "Ancestral Houses" (also included, though perhaps a poem like "A Prayer for my Daughter" renders more richly Yeats's feeling about the Great House life) are different examples of it. But this is not pastoral poetry in any of the definitions given by the editors. Then again there is the concept of the garden as an emblem or microcosm or embodiment of men's desire to order his environment; poems embodying this kind of vision cross the pastoral tradition but are not of its essence. Then there is the Horatian "*beatus ille*" tradition—referred to briefly but never properly discussed—which also crosses the pastoral tradition but which has a separate inspiration. (The influence of the Satyr of Saxon on the pastoral tradition, by the way, is never discussed.) There is the tradition of what Dr Johnson called "local poetry, of which the fundamental subject is some particular landscape, to be poetically described, with the addition of such embellishments as may be supplied by historical retrospection, incidental meditation." This tradition is represented in the anthology, but none of the period introductions gives any account of it or of its importance for English poetry. None of these kinds of poetry has anything to do with the life of shepherds, idealized or not.

The absence of sufficiently discriminating explanations in their introductions to each section leaves the rationale of the anthology uncertain. What are we to make of Spenser, Milton, Pope, Ambrose Phillips, Gray, Stephen Duck, Tennyson and Yeats (to name no more), all represented by "pastoral" poems utterly different in nature, inspiration and background? Does any satisfactory awareness of the nature and characteristics of kinds of poetry that can be called "pastoral" emerge? I think not. Handsome and carefully edited though the anthology is, and containing, as it does some great, some interesting, some amusing and some dull poems from the Elizabethans to Yeats, it does not succeed in imposing any significant unity on the poems in prints. Paradoxically, only by examining more precisely the diversity of poems that have been or could be called "pastoral" could the editors have made sense of their use of the term in a collection of poems each entitled "pastoral". As it is, the reader puts the book down still puzzled by the academic habit, which gives the single term "pastoral" to such a strange variety of forms, moods, themes, attitudes and styles.

Mutability

The Renaissance Chaucer
by Alice S. Miskimin
Yale University Press, £7.50
ISBN 0 300 01768 5

Dr Miskimin does not document changes in fifteenth and sixteenth-century poets' and readers' apprehension of Chaucer, so much as explore the philosophical issues raised by the relation of speaker, poet, audience and reader in self-conscious fiction. This involves the historical assertion that Renaissance conceptions eventually obscure Chaucer's "wry serio-comic irony". But for Dr Miskimin the Renaissance is "an elastic historical illusion", generating a review that comprehends Sidney, Spenser, Shakespeare and Drydon; historical time is presented largely as a metaphor, mutability, as an initiation into the critical mysteries of psychic experience. Her view of mutability as "a reflex of the invocation of authority" leads to a brilliant, sustained discussion of medieval and Renaissance neo-Platonism in her second chapter. Elsewhere, Dr Miskimin offers excellent but spasmodic insight into *The Faerie Queene*, Boethius, and indeed Chaucer. Her critical close reading, when it functions (all too seldom) as more than cursory punctuation of excessive quotation, is of high quality.

Yet nowhere else does her work meteb the sensitive and cogent second chapter. Initially telling points are elongated over many pages, and the precision of their articulation becomes blurred. Long passages are ill-written, key sentences sometimes nullified by grammatical inexactitude. The vocabulary of mutability is inadequate; the words "metamorphosis", "mutation" and "evolution", recur monotonously, and are varied only in uglier phrases ("the evolution by mutagenesis of new form"; "some phenomena of mutation"). The workings of the psyche thus make shift in the language of the test-tube. Critically, this study has little to add to the canons of the Chaucer orthodoxy. Dr Miskimin's philological analysis is weak, and she criticizes *The Shepherd's Calendar* in effect for its genre, for the rural artifice which the eclogue demands. She chooses to ignore manuscripts, except for a few vague, at times inaccurate, allusions; but the evidence of the Chaucer manuscripts, with their marginalia and clear rubrics, may indicate that Chaucer's successors, in the fifteenth century at least, read piecemeal, in search not of a poet but of poems, or even a few lines, to recreate. Nor does Dr Miskimin demand much of her references to history and art: "All that critical statement of works of art is analogical; all is uniformly unsuccessful, contributing nothing to the understanding of art or literature." Dr Miskimin's undoubted erudition is capable of analogical inanity, and often serves only to erect a scholarly House of Fame, in which she cannot but appear as the clerk of great authority.

Dr Miskimin is much involved with questions of methodology. Unfortunately, her involvement is intimated in observations grounded on levels of awareness below those which are normally active in the composition of lucid and coherent prose. The editor must necessarily be concerned with questions of method; but when a critic confesses to methodological obsessions, it may well be an indication of problems which should have been solved before the book was written. The major unsolved problem is that Shakespeare's Chaucer is not Henryson's, and neither resembles Spenser's Chaucer. From her own critical responses, Dr Miskimin has created an ostensibly objective Chaucer to set against "the Renaissance". Her Renaissance poets, subjectively and analogically defined, have no reality. It is absurd to elevate critical response to the status of scholarly evidence. In writing "a new kind of comparative literary history", Dr Miskimin has turned what might have been a stimulating, cheap (and modestly retitled) iconograph into a disorganizing and expensive

Metaphysics

The Metaphysical Poets
edited by Gerald Hammond
Macmillan, £2.95 and £1.25
ISBN 333 15465 7 and 15466 5

Donne and Somson Agonistes
edited by Julian Lovelock
Macmillan, £2.95 and £1.50
ISBN 333 03524 0 and 00962 2

There still exists a generation of scholars to whom the very notion of the Casebook Series, selections of critical essays on specific topics or topics, is utterly abhorrent. A vestige of the Protestant ethic perhaps confuses the effort of handling library catalogues with the effort of strenuous thinking: that an understanding is hard to find but not, to my mind, imply that the best criticism ought to be hard to get hold of. I am not convinced that it is better to read article from periodicals in their original setting on the fourth floor of the library. It is true that the student may well be led on to read other essays in the same journal—on the Great Vowel Shift, or the Sources and Analogues of Lorry's Roman — but it might be argued that his mental sinews would be more effectively stiffened by reading several quite distinct analyses of the topic he's actually working on. And this is the virtue of these books at their best: they can be within one volume a series of works of reading, relating the text to genre, the history of ideas and social background, and so on.

Julian Lovelock's *Donne and Samson Agonistes* offers essays that have chosen to show a range of possible approaches to Milton. It is a fairly conservative selection full of familiar names—A. S. P. Woodhouse, J. B. Broadbent, C. L. Barber. Its main value is the juxtaposition of different ways of looking at the same material. On *Samson*, for instance, there are essays by Don Cameron Allen on the theology, M. A. Radzinowicz on the politics and Stanley Fish on the poem's self-cancelling nature (infuriating, by the way, criticizing *The Shepherd's Calendar* in effect for its genre, for the rural artifice which the eclogue demands. She chooses to ignore manuscripts, except for a few vague, at times inaccurate, allusions; but the evidence of the Chaucer manuscripts, with their marginalia and clear rubrics, may indicate that Chaucer's successors, in the fifteenth century at least, read piecemeal, in search not of a poet but of poems, or even a few lines, to recreate. Nor does Dr Miskimin demand much of her references to history and art: "All that critical statement of works of art is analogical; all is uniformly unsuccessful, contributing nothing to the understanding of art or literature." Dr Miskimin's undoubted erudition is capable of analogical inanity, and often serves only to erect a scholarly House of Fame, in which she cannot but appear as the clerk of great authority.

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BOOKS

Immigrant shelter

Point of Arrival : A Study of London's East End
by Colin Bernant
Eyre Methuen, £5.00
ISBN 0 413 28060 8

Historians have had far less to say about the East End than novelists, and here is a novelist turned historian because "in spite of all the new building there is hardly an area of London where the past may be more perceptibly felt". He senses, without saying so, that the central drama in the history of a city lies in the endless chain of clumsy acts by which the whole intricate apparatus made acceptable by one set of users is given over to the next. He seeks the connexions and the disconnexions between the lot of successive immigrant groups taking over the same piece of contested territory beyond Aldgate Pump in the course of the last 400 years—the Huguenots, the Irish, the Jews (for whom, understandably, he spares a third of the book) and the Pakistanis.

We have had some particularly intelligent books recently on the emergence of the East End as a kind of predicament, notably Keating's *Working Classes in Victorian Fiction* and Stedmeo Jones's *Outcast London* — both highly apposite but overlooked here. Apart from these, no one has written a general history of any note of the East End proper since Robert Sinclair's and Millicent Rose's rather penny-plain volumes appeared over twenty years ago.

Nor have Lloyd Gartner's and Bernard Gainer's more recent scholarly scrutinies of the two faces of the great Jewish influx into the Tower Hamlets themselves around the turn of the century fleshed out its fascinating cultural topography to the full. All the time, blitingly affectionate reminders of particular childhood corners—like Louis Horen's or A. S. Jasper's—have kept coming, and that sadly deceased little journal *East London Papers* went on with its quest for the historical roots of the quarter's contemporary culture as long as it could. A full bibliography of the East End would now begin to fill a volume of its own.

Point of Arrival does not, alas, have the strength that would have come simply from binding such items together in sufficient quantity, nor does it probe with affect any neglected source, apart from a couple of unpublished doctoral dissertations. The demographic basis is flimsy, the numerology weak, and faulty, the bibliography slipshod, the index unhelpful, and the reader cannot always be sure of the date he is at nor that the evidence adduced belongs to the East End or, indeed, how far that territory extends.

Where the book scores is in its lively story-telling and well-pointed phrases—the rich remembered the East End in their wills, he tells us "as if it were a sanctuary for old horses"—and in the author's often moving perception of what being an alien immigrant might mean. His interest is in people and what they do rather than in the places they use or in intellectual abstractions.

Bernant runs predictable risks with his material, as anyone evoking such a motley would do, above all in giving the scene colour and movement it never possessed, substituting melodrama and mayhem for mile upon mile of mean streets and bitterly stunted lives, the vicariously exciting image for the dulling contact with reality. The complementary danger lies in supposing that the most lovish proof of philanthropy ever summed more than a pitiable fraction of those on hand, and in making the social history of the place into a serial story of immigrants and outsiders exclusively — Bernan, Barnardo, Booth, Burdett-Coutts, Octavia Hill, and the rest—or magnifying the few institutions that were more visible than pervasive on such a flat plain.

The great problem in circumstances like these is to account for the majority not on the move or on some dole, to explain the residuary status of the East End and the structure of its labour market, to analyse the extent to which the immigrants took the jobs and the houses of those in possession, and to keep track of the newcomers when they were newcomers no more. We are told all too little of these things.

The Jews, as V. D. Lipman has explained better than anyone, broke out of their self-enclosed ghetto and took to the suburbs and Bernant tells us that "there gradually evolved two distinct Jewries within the East End itself, the one sacred and the other profane, the one reaching back towards Russia and beyond it to the Second Temple, and the other recondling itself to this world and to England". Whatever happened to the Irish, and what will happen next to the Pakistanis? He is perhaps less sanguine of the outcome of the current process of assimilation than his book appears to justify. One could, on the contrary, wish that it was now being read in every street in Whitechapel.

H. J. Dyos

Portrait of Chartism

Chartism and the Chartists
by David Jones
Allen Lane, £6.00 and £3.00
ISBN 0 7139 0921 8 and 0922 6

Chartism and its votaries continue to exercise vociferous appeals to a wide investment of modern writers. Professor Asa Briggs's call of 1958 for further research both on places and on people" has inspired an exciting crop of local studies of Chartism from Aberdeen to Cornwall. There are polemical studies of the "working-class movement". There are regular reprints of documents and journals. Occasionally there are attempts to reconsider and synthesize this growing corpus of documentation, analysis, exertion and narrative. The growth has been supplemented by a stream of biographical studies: from poor, sandy-soaked, girl-seeking Feargus O'Connor to temperance campaigner Robert Lowery; from William Lovett, with his belief in "just, rational, and constitutional foundations" to George White, who would . . . readily have headed an insurrection".

The new study by David Jones, already known for his survey of pre-Chartist Welsh radicalism, *Before Rebecca* (1973), does not fit into any generalized classification of Chartist studies. Dr Jones does not try to present a history of Chartism or of Chartists in the usual way, by dividing the movement into a series of events. Instead, Dr Jones aims to give students "a pen portrait of Chartism" and "to capture something of the atmosphere, integrity and complexity of this great movement" through a series of vivid pictures of different aspects.

Any trespasser in the terra incognita of entrenched partisans who claim a prescriptive monopoly of proletarian history faces hazards. Dr Jones's impressionistic kaleidoscope may not appeal to every student of Chartism. Potential recorders of the movement in Tillicoultry or Truro may gleefully reveal some hitherto-unappreciated local nuance. Some Marxist, devoted to mid-Victorian exegetical methodology, may whoop upon some accidentally-omitted comma from the maestro's writ.

Interpretations of Chartism remain curiously personal. To my mind, Dr Jones has produced a brave, important and immensely useful study, based upon wide research and a sensible balance. As he modestly admits, students may need to supply the final story before using this volume. But he has provided an exciting reward for those who have already waded through the Chartist minutiae. With any luck this fascinating volume should satisfy the redoubtable lady who tormented a novice Workers' Educational Association lecturer some twenty years ago with the question "How dare you say that Chartism failed? My grandfather was a

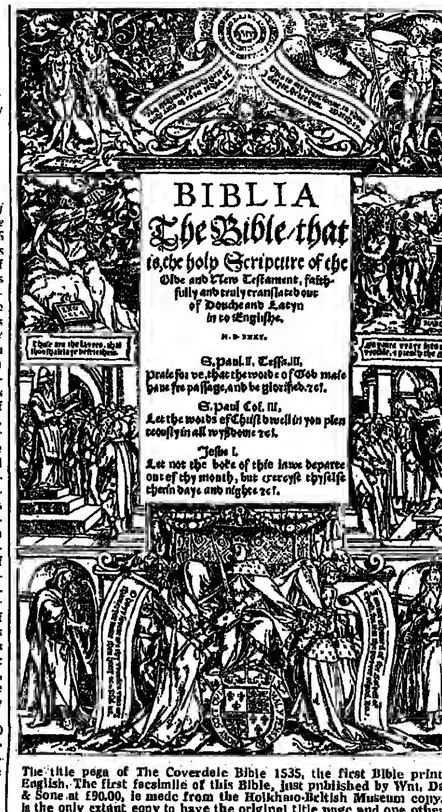
Sorting out the styles

Sir Banister Fletcher's "A History of Architecture"
eighteenth edition revised by
J. C. Palmes
The Athlone Press, £12.50
ISBN 0 485 55001 6

Banister Fletcher's *A History of Architecture on the Comparative Method* was first published in 1896 at a time when mammoth histories of architecture were a way of demonstrating contemporary beliefs in the rationality of the architectural styles of the past. Auguste Choisy, for instance, published his magnum opus, the *Histoire de l'Architecture* in 1899 and tried to show how all the most consistent styles had developed out of structural necessities, new techniques and the deterministic influence of climate and geographical location. Banister Fletcher had a similar rationale and his work, like Choisy's was plentifully illustrated with crystal clear drawings of architectural details, plans and axonometric projections. The book was laid out on an astonishingly encyclopaedic framework, with each style placed against a set of standard coordinates: the *Influence* of geography, geology, climate, religion, society and history, an analysis of the *Architectural Character* of each style, a selection of *Examples* (illustrated in drawings and photographs), and the famous *Comparative Analysis*, in which the elements of architecture (plans, walls, openings, roofs, etc.) were compared within each style and, by implication, across the styles.

Now, 18 editions later and 20 years after his death, Banister Fletcher lives on. Gone is the "Comparative Method" from the title and from the contents, although the illustrated comparisons are still included. Gone are some of the reasoning absurdities of the original classification and stylistic analysis which Professor Cordingley's seventeenth edition had not altogether weeded out. Although the methodology of Banister Fletcher relies on simplifying the complex history of style in western architecture to a few broad categories, the text now includes reasonably complete descriptions of the major stylistic sub-headings. As an example, Banister Fletcher, as a Gothicist, had always lumped together everything after 1480 and before 1830 as "Renaissance". Although this is still followed for the various chapter headings which deal with this period, the text does take trouble to point out the differences between High Renaissance and Baroque.

There has been a great deal of painstaking improvement, but it must be said that the chief value of the book remains the breadth of coverage rather than its depth; it will probably be most useful for the sections on pre-Renaissance developments all over the world (including in this edition, new chapters on the architecture of Indo-China and pre-Columbian architecture in the Americas), rather than the well-charted waters of the Renaissance to the present day. For all that, there is some very interesting material on nineteenth-century revivals and a new chapter by James Palmes himself, on international architecture since 1914, which is a useful survey. James Palmes, whose knowledge of nineteenth and twentieth-century architecture (and skill as a translator) have long been recognized, and his 13 contributors are to be congratulated on a brave and industrious effort to drag this nineteenth century book further into the twentieth century. No doubt the eighteenth edition will prop up many a row of architectural books in the years to come, and its 1,300 pages will continue to instruct, and occasionally amuse, its readers all



The title page of The Coverdale Bible 1535, the first Bible printed in English. The first facsimile of this Bible, just published by Wm. Dawson & Sons at £90.00, is made from the Holkham-British Museum copy. This is the only extant copy to have the original title page and one other leaf. Altogether about eighty copies of the 1535 Bible are known, all imperfect.

Psephologists' delight

The Age of Alignment : Electoral Politics in Britain, 1922-29
by Chris Cook
Macmillan, £10.00
ISBN 333 15629 3

Best to say at once, since Dr Cook's title is hard to fathom, what this book is about. If one ignores the warming-up exercises and lap of honour, it is essentially a study of the general elections of 1923-4 and the by-elections clustered about them, with some connecting narrative about developments in "high" politics. In many ways the book serves as a sequel to Dr Michael Kinnear's *The Fall of Lloyd George*: the concentration on electoral statistics, the concern with local arrangements and the use of provincial newspapers as primary source material are much the same. What is different is the electoral topography of the period and its effects on party orientation. Four general elections in seven years offer the psephologist a mass of raw data; it is no accident that the reader finds himself confronted with tables interspersed in the narrative and a barrage of information about turnout and swing. Nor is it unnatural that Dr Cook should address himself to the problem of the decline of the Liberal party—the "most obvious index of change in the politics of the post-war decade."

Dr Cook impresses by his command of electoral minutiae. Municipal politics are (for the first time) dissected, local power-structures evaluated, candidates counted, finances audited, manifestos scrutinized to the last inch of column space. [illegible] um an hugo, as historians have been led to suppose. The election of 1923 is shown to have been a crucial last opportunity for Liberals to rally; that they did not is seen by Dr Cook as the result of bad leadership and poor tactics. Yet it has to be said that in order to draw such conclusions he is obliged to enter the world of high politics where his authority is far more limited. The sources on which Dr Cook has relied are not suited to explorations in this area and he is frequently driven back to an overworked diary (C. P. Scott) for his illustrations. A preoccupation with data, moreover, precipitates some questionable judgments when the slide-rule has to be put away. It is all too easy to see "a major political storm" in the tempests of *Hansard* and the local press.

What of the book's contribution to the ever-growing literature that sets out to analyse the decline and fall of the Liberal party? It is hard to see how a book like Dr Cook's can do more than monitor this process as opposed to demonstrating its causality. If the critical element in the decline is taken to be the relationship between the Liberals and their electorate, then this kind of history may open many doors. But there is a lingering feeling that electoral history reveals consequence as much as cause and that other relationships, such as that between Liberals and their liberalism, may be more fundamental to an understanding of why a political party and a doctrine were extinguished. Again, Dr Cook does not pretend that his conclusions lend themselves to any startling or dramatic new theory. Rather, what his book does is to provide a body of electoral fact which pretending theorists will need ultimately to cir-

Classified Advertisements

Index to Appointments Vacant, Wanted and other classifications

Appointments vacant
Universities
Fellowships & Studentships
Polytechnics
Technical Colleges
Colleges and Institutes of Technology
Colleges of Education
Colleges of Further Education
Colleges and Departments of Art
Administration
Overseas
Government
Industry
Adult Education
Librarians
General Vacancies

Appointments wanted
Other classifications
Announcements
Exhibitions
For Sale and Wanted
Courses
Holidays and Accommodation
Typing and Duplicating

Universities

KELVIN GROVE COLLEGE OF ADVANCED EDUCATION

Kelvin Grove College of Advanced Education is an autonomous College specializing in the preparation of Primary, Pre-School and Secondary teachers. In addition it offers a wide range of in-service courses for teachers which will include a four-year degree programme from 1976. The College overlooks the city of Brisbane from a position two kilometres from the business centre. Student enrolment in 1976 will be approximately 2,000.

Applications are invited for the academic positions listed below effective from January, 1976.

LECTURER/SENIOR LECTURER IN SCIENCE EARTH SCIENCE

Ref. No. 75/A/54
Lecturing in the content and methodology of Astronomy, Meteorology, Oceanography and some Geology to graduate and undergraduate teacher education students will be required. Experience of teaching Earth Science at the secondary school level would be an advantage.

ELEMENTARY SCIENCE EDUCATION

Ref. No. 75/A/55
Lecturing duties will be in both the subject matter and methods of elementary (primary) school science.
The successful applicant will be expected to assist in the development of elementary science programmes for pre-service and in-service teacher education courses. Elementary school teaching experience would be an advantage.

CHEMISTRY & SCIENCE EDUCATION

Ref. No. 75/A/56
The successful applicant will be expected to lecture:
(i) in Chemistry and methods of teaching it to graduate and undergraduate secondary teacher education students, and
(ii) in science curriculum programmes for pre-service or in-service teacher education students.
Ability to carry out research in practical curriculum development would be advantageous, and secondary school teaching experience would be desirable.

LECTURER IN SUSINESS EDUCATION/COMMERCIAL SUBJECTS

Ref. No. 75/A/57
Vacancies will occur for persons with expertise in:
(a) Accounting, Pitman Shorthand and Typing including their content and methodology;
(b) Accounting (including Data Processing), Economics, with associated teaching methods.
Applicants should have a strong background in one or more of the areas specified for each position, together with appropriate academic qualifications and successful teaching experience.

LECTURER/SENIOR LECTURER IN HOME ECONOMICS

Ref. No. 75/A/58
Experience in one or more of the teaching areas is required together with appropriate academic qualifications and teaching experience preferably at the tertiary level:
Management and Consumerism, Housing and/or Human Environment, Textiles and Clothing, Nutrition and Foods, Human Relationships, Principles and Practice of Home Economics Teaching.
Experience in initiating and developing tertiary courses in Home Economics is desirable.

LECTURER IN MATHEMATICS

Ref. No. 75/A/59
(Two Positions)
Applicants should have a strong background in one or both of the following areas:
Secondary Mathematics Curriculum Studies.
Computer Science and the application of computers to Mathematics Education.
Appropriate academic qualifications in Mathematics and a record of successful teaching experience in secondary or tertiary institutions are also required.

LECTURER IN MUSIC

Ref. No. 75/A/60
Vacancies will occur in each of the following areas:
History of Music and Harmony, preferably with expertise in Contemporary Music.
Piano, involving development of skills both in performance and Keyboard Musicianship.
Appropriate qualifications, evidence of performance skill, and satisfactory teaching experience are required.

LECTURER/SENIOR LECTURER IN SCHOOL LIBRARIANSHIP

Ref. No. 75/A/61
Applicants should have a strong background in one or more of the following areas together with appropriate academic and professional qualifications, experience in teaching or working as a teacher-librarian:
The School Library in Education.
Selection and Use of Resource Materials.
Communication Media.
School Library Administration.

LECTURER IN SOCIAL STUDIES (GEOGRAPHY)

Ref. No. 75/A/62
Applicants should have a strong qualification in Geomorphology together with experience in some of the areas of Economic Geography, Human Geography, Settlement Geography, Geographic Techniques and Environmental Studies. Appropriate academic qualifications and evidence of successful teaching experience are also required.

LECTURER IN SOCIAL STUDIES (HISTORY)

Ref. No. 75/A/63
Applicants should have qualifications in some of the areas of Contemporary History, International Relations, Australian History, History of South East Asia and History of the U.S.A. A background in Anthropology and Ancient History would be an considerable advantage. Appropriate academic qualifications and evidence of successful teaching experience are also required.
Appointments will be made within the following salary ranges in accordance with qualifications and experience:—
Lecturer II $9,945-$13,849 per annum (Aust.)
Lecturer I $11,835-$16,849 per annum (Aust.)
Senior Lecturer $16,946-$19,944 per annum (Aust.)
Progression beyond $14,769 in the Lecturer I range and $16,999 in the Senior Lecturer range will depend upon possession of appropriate qualifications.
Successful applicants will be expected to commence duty by January 31, 1976.
Applications close Monday, August 25, 1975.
Application forms and further details are available from the Registrar, Kelvin Grove College of Advanced Education, Victoria Park Road, Kelvin Grove, Brisbane, Queensland, 4059. Telephone 88 9311.

The British Council

invites applications for the following posts:

English Language Teaching Institute (Sudan)
Academic Director, Khartoum
Degree, qualification in applied linguistics or similar relevant field; at least three years' experience.
Salary £4264-£5524 pa.
Benefits: overseas allowances. Two-year contract, renewable. 75 CO 111

Lecturer in English—ESP (Egypt)
Department of English, University of Alexandria
Graduates with TEFL qualification and five years' university TEFL experience.
Salary: £4264-£5524 pa, tax free.
Benefits: free furnished accommodation; overseas and children's allowances. One-year contract, renewable. 75 AU 88

Return fares are paid. Local contracts are guaranteed by the British Council.
Please write, briefly stating qualifications and length of appropriate experience: quote relevant reference number for each further details and an application form to The British Council (Appointments), 65 Davies Street, London W1Y 2AA.

THE COLLEGE OF LAW

LECTURER IN LAW

Applications are invited for a post of lecturer. Applicants should be barristers and should have obtained a good honours degree (though not necessarily in law) and a good pass in the Bar Finals. Teaching or research experience would be an advantage. Practice at the Bar is desirable, though not essential. The salary will be within the scale £4,212-£6,864 pa (which includes a London allowance of £550), with the entry point depending on qualifications and experience. Normal annual increments are £288.
Apply with full details and the names of two referees to the Director of Legal Studies, The College of Law, 27 Chancery Lane, London, WC2A 1NL, from whom further particulars may be obtained.

AUSTRALIA
THE AUSTRALIAN NATIONAL UNIVERSITY
SENIOR LIBRARIAN
Grade 1 or 2
(Life Sciences Library)
Applications are invited for the above position in charge of the Life Sciences Library now under construction and to be opened in late 1976. The library will have approximately 80,000 volumes. Interest in any aspect of research in the doctoral and post-doctoral type is desirable. The School of Biological Sciences as well as the science lending and research in the Faculty of Science.
Principal duties will include the supervision of all reader services, the acquisition and organization of library materials, information retrieval services and reference work, reader services derived from ANU/ANZ and BIS. Programmes are already in operation. Applicants should be prepared to take part of the senior library administration and will work closely with the central services.
Applicants should possess a degree, preferably in the life sciences, professional library qualifications and considerable relevant experience.
Salary according to qualifications and experience within the limits $A11,417-$A16,744 per annum.
Assistance with passages and accommodation will be provided to the successful candidate.
Written applications, quoting reference number 75/Life, should be forwarded to the Registrar, The Australian National University, G.P.O. Box 4, Canberra A.C.T. 2600, with whom applications close on 1 August 1975. (T.W. B. Hamilton, Librarian.)

AUSTRALIA
AUSTRALIAN NATIONAL UNIVERSITY
Applications are invited for appointment to the following:
INSTITUTE OF ADVANCED STUDIES, SCHOOL OF PHYSICAL SCIENCES
FELLOW (SENIOR FELLOW) IN ASTRONOMY — Emphasis of the position is on observational astrophysics in the fields of stellar and galactic dynamics and stellar energy astrophysics.
Closing Date: 15 August 1975.
FACULTY OF ARTS
SENIOR LECTURER/LECTURER IN ENGLISH: More than one appointment may be made, and successful applicants would be assigned to the School of Pacific Studies in 1976. The Department is particularly seeking applicants whose interests lie in Renaissance and Seventeenth Century literature, or American literature, or Modern Drama; but applicants with other special interests will be considered.
Closing Date: 1 September 1975.
CHAIR OF AUSTRALIAN HISTORY: An appointment will be made in the Faculty of Arts, Department of History. The Chair will become vacant on the retirement of the Professor Manning Clark, A.C., C.B.E., F.A.H., F.A.S.S., F.R.S., F.R.A.S.L. in 1976. Applicants should be able to commence his full time teaching as a Library Fellow in the University.
Closing Date: 8 September 1975.
Salaries: Salary as Professor is $A23,669 p.a. Salary as Reader is $A19,943 p.a. Salary as Senior Lecturer is $A16,744 p.a. Salary as Lecturer is $A11,417-$A13,849 p.a. Salary as Senior Fellow is $A19,943 p.a. Salary as Fellow is $A16,744-$A20,744 p.a. Salary as Senior Tutor is $A16,744 p.a. Salary as Tutor is $A11,417-$A13,849 p.a. Salary as Lecturer is $A11,417-$A16,744 p.a. Salary as Senior Lecturer is $A16,744-$A20,744 p.a.
Tenure: Professor is retiring age. Reader, Senior Fellow and Senior Tutor are offered tenure, or the possibility of tenure, subject to satisfactory performance. Fellow and Lecturer for three years in the first instance with possibility of tenure. Tutor for one year, normally renewable for a further year. Lecturer for three years in the first instance with possibility of tenure. Senior Lecturer for three years in the first instance with possibility of tenure.
Superannuation: Reasonable travel allowances are paid and assistance with housing is given for an appointee from outside the area. Superannuation benefits are available.
The University reserves the right not to make an appointment or to make an appointment to a position other than that advertised.
Applications should have tertiary qualifications and have some teaching or tutorial experience at tertiary or upper secondary level. Applicants for the Senior Lecturer post should have postgraduate qualifications and appropriate research experience. The Department is introducing self-paced methods of instruction and seeks the appointment of men or women with competence and experience in the field.

DEPARTMENT OF PHYSICS

No. 24 LECTURER/SENIOR TUTOR/TUTOR: The successful applicants will be involved in the teaching of Physics at the matriculation and at the undergraduate level to students in professional or technical areas of learning including Accounting, Architecture, Building, Engineering, Chemical Technology, Surveying, Design, Materials Science, Mechanics of Machines. They will also be required to conduct and/or supervise research preferably in topics relevant to Papua New Guinea.

DEPARTMENT OF SURVEYING

No. 25 LECTURER IN SURVEYING: QUALIFICATIONS—(a) Essential—(i) A degree in surveying or an equivalent qualification and (ii) professional teaching experience in surveying for 2 years or more. (b)—Desirable—(i) A postgraduate diploma or higher degree in a branch of surveying such as geodesy, cartography, cadastral surveying or photogrammetry, and/or (ii) research experience.
No. 27 TECHNICAL INSTRUCTOR IN SURVEYING: QUALIFICATIONS—Certificate or Diploma or equivalent qualification in surveying, and at least six years of practical experience in land and engineering surveys. Candidates with teaching experience will be preferred.
No. 28 SENIOR INSTRUCTOR/INSTRUCTOR IN CARTOGRAPHY: The Surveying Department conducts a 3-year Diploma in Cartography and Survey Drafting plus a 2-year Drafting Certificate Course.
Applicants should have an appropriate degree, diploma or equivalent qualification and should have had wide practical experience and preferably some teaching experience. Research activities in Cartography will be encouraged.
No. 29 CHIEF/PRINCIPAL/SENIOR INSTRUCTOR IN VALUATION: QUALIFICATIONS—Appropriate degree or equivalent qualification, and wide practical experience in the field of valuation. Teaching experience is desirable. In all cases the appointees will work under the direction of the Head of Department of Surveying and be responsible to him. They will be expected to carry out duties of teaching, fieldwork guidance, assessments, courses and department administration and research.

PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY

ACADEMIC POSITIONS AVAILABLE 1976

The University is geographically situated on the pleasant coastal town of Lae enjoying a tropical climate all year round.
Applications are invited for the following academic positions available from January, 1976:—

FACULTY OF ARCHITECTURE AND BUILDING

No. 29 LECTURER/SENIOR LECTURER: Applicants should hold an appropriate academic qualification, professional and teaching experience in one or more of the areas of Architectural Design, Building Technology and Urban and Regional Planning.

FACULTY OF ENGINEERING

DEPARTMENT OF ELECTRICAL ENGINEERING

The Department conducts a 5-year Degree course in Electrical Engineering, with options in power and in communication engineering, and a sandwich-type Diploma course, in communication engineering which includes 3 years of industrial study.
No. 21 LECTURERS IN ELECTRICAL ENGINEERING: DUTIES—Appointees will be required to assist in the basic teaching and academic administration of the Department, to teach up to final degree level in one of the following subject areas, and to conduct and supervise research, preferably in topics relevant to Papua New Guinea:
(a) Control and Power Generation or Utilization.
(b) Industrial Electronics, high-power applications of electronic devices; instruments, etc.
(c) General Electronics, preferably with experience in digital systems.
QUALIFICATIONS—Applicants should have a good first degree in Electrical Engineering and preferably a postgraduate qualification, industrial and/or tertiary teaching and research experience is also sought.
No. 22 TECHNICAL INSTRUCTOR OR SENIOR TECHNICAL INSTRUCTOR COMMUNICATIONS ENGINEERING: to teach technical subjects in the communications Diploma course of technician engineering standard, and to assist in the general development of the course, training aids and laboratories.
QUALIFICATIONS—Applicants should have wide experience in the telecommunications field and have been actively engaged in telecommunications training at technician engineer level. Qualifications of at least HNC or City and Guilds full technological standard are required. Specialist experience in one or more of the following fields would be an advantage: HF, VHF, Microwave, Ionospheric, Broadcasting.

DEPARTMENT OF CIVIL ENGINEERING

No. 23 LECTURER IN MINING ENGINEERING: DUTIES—To provide instruction in engineering and geology related to open-cut mining. The course is an option within the Civil Engineering Degree Course and is assisted by a complementary in Mineral Processing and by relevant subjects from the other civil engineering options. An interest in industrial research is required.
QUALIFICATIONS—Candidates should possess a relevant degree, preferably with Honours, and have some years of experience in the mining industry.
No. 24 LECTURER IN STRUCTURAL ENGINEERING: DUTIES—To provide instruction in Structural Theory and Design as a major discipline, and to contribute to teaching in other disciplines, partic. arly Soil Mechanics. An interest in research is required.
QUALIFICATIONS—Candidates are preferred to hold a higher degree, and should have experience of professional practice.

DEPARTMENT OF MECHANICAL ENGINEERING

No. 25 LECTURER/SENIOR LECTURER IN MECHANICAL ENGINEERING: Applicants should have a degree in Mechanical Engineering preferably at Honours level, together with at least two years of industrial or research experience. Experience of teaching at a tertiary level institution will be an advantage.
Appointees will be required to teach in one or more of the following areas: Production Engineering, Design, Materials Science, Mechanics of Machines. They will also be required to conduct and/or supervise research preferably in topics relevant to Papua New Guinea.

DEPARTMENT OF SURVEYING

No. 26 LECTURER IN SURVEYING: QUALIFICATIONS—(a) Essential—(i) A degree in surveying or an equivalent qualification and (ii) professional teaching experience in surveying for 2 years or more. (b)—Desirable—(i) A postgraduate diploma or higher degree in a branch of surveying such as geodesy, cartography, cadastral surveying or photogrammetry, and/or (ii) research experience.
No. 27 TECHNICAL INSTRUCTOR IN SURVEYING: QUALIFICATIONS—Certificate or Diploma or equivalent qualification in surveying, and at least six years of practical experience in land and engineering surveys. Candidates with teaching experience will be preferred.
No. 28 SENIOR INSTRUCTOR/INSTRUCTOR IN CARTOGRAPHY: The Surveying Department conducts a 3-year Diploma in Cartography and Survey Drafting plus a 2-year Drafting Certificate Course.
Applicants should have an appropriate degree, diploma or equivalent qualification and should have had wide practical experience and preferably some teaching experience. Research activities in Cartography will be encouraged.
No. 29 CHIEF/PRINCIPAL/SENIOR INSTRUCTOR IN VALUATION: QUALIFICATIONS—Appropriate degree or equivalent qualification, and wide practical experience in the field of valuation. Teaching experience is desirable. In all cases the appointees will work under the direction of the Head of Department of Surveying and be responsible to him. They will be expected to carry out duties of teaching, fieldwork guidance, assessments, courses and department administration and research.

FACULTY OF NATURAL RESOURCES

No. 30 SENIOR LECTURER/LECTURER IN WOOD SCIENCE AND TIMBER UTILISATION: Applicants are invited for this post in teaching and undertake research in the fields of wood science, timber technology and utilisation with the emphasis on wood as a raw material and natural resource; able to contribute significantly to the economy of Papua New Guinea. The country has an extensive area of tropical high forest, but its use and exploitation must be carried out with wisdom and care to perpetuate such a valuable natural asset. Government policy to achieve this includes the promotion of local forest products, expansion of forest user industries at village and regional level and a wider use of secondary forest species through a better understanding of their timber properties and processing characteristics. Applicants should have a relevant postgraduate research qualification, preferably at Ph.D., have considerable experience in forest industries in the tropics and, for the higher post, several years teaching experience at university level.

FACULTY OF GENERAL STUDIES

DEPARTMENT OF LANGUAGE & SOCIAL SCIENCE

No. 31 LECTURERS/SENIOR TUTORS IN LANGUAGE: Interested applicants should have experience in teaching English as a second language and should possess a postgraduate qualification in this field. Experience in teaching English for Science and Technology would be an advantage, and ability to produce original teaching material is desirable. Language is provided exclusively as a service course to students taking a wide range of degrees. The Department has been developing its own language materials and courses for this purpose, and research and development within the department is directed towards the implementation of innovative teaching methods and materials based on a functional language syllabus.
No. 32 LECTURER/SENIOR TUTOR IN SOCIAL SCIENCE: Intending applicants should have a lively interest in political affairs in general and in problems of the Third World in particular. A degree in History, Politics or Economics together with some teaching experience is required, as well as the ability to stimulate student discussion and to assist in community service.
The Social Science course is intended to give students a background knowledge of their own country's problems and its place in the world. It emphasizes the responsibilities of an educated elite in a developing country and aims to provide fair and accurate information about current problems in Papua New Guinea.

DEPARTMENT OF MATHEMATICS

No. 33 SENIOR LECTURER/LECTURER/SENIOR TUTOR/TUTORS IN MATHEMATICS: The successful candidates will be appointed at an appropriate level depending upon the qualifications and experience of the applicants. Applicants may indicate the level and position for which they wish to be considered. The successful applicants will be involved in the teaching of Mathematics at the matriculation and at the undergraduate level to students in professional or technical areas of learning including Accounting, Architecture, Building, Engineering, Chemical Technology, Surveying and Forestry.
Candidates should have tertiary qualifications and have some teaching or tutorial experience at tertiary or upper secondary level. Applicants for the Senior Lecturer post should have postgraduate qualifications and appropriate research experience. The Department is introducing self-paced methods of instruction and seeks the appointment of men or women with competence and experience in the field.

DEPARTMENT OF PHYSICS

No. 34 LECTURER/SENIOR TUTOR/TUTOR: The successful applicants will be involved in the teaching of Physics at the matriculation and at the undergraduate level to students in professional or technical areas of learning including Accounting, Architecture, Building, Engineering, Chemical Technology, Surveying, Design, Materials Science, Mechanics of Machines. They will also be required to conduct and/or supervise research preferably in topics relevant to Papua New Guinea.

GENERAL INFORMATION

Salaries within the ranges:
Senior Lecturer K8,481 rising K7,107 per annum.
Senior Tutor/Senior Lecturer K8,286 rising K9,173 per annum.
Lecturer/Senior Lecturer K6,609 rising K12,898 per annum.
Senior Tutor/Senior Lecturer K6,286 rising K8,286 per annum. (K1=$Aust. 1.)
Appointees within these salary ranges will be according to qualifications and experience.
Allowances additional to salary are payable as follows: Married K2,300 per annum. Single K1,300 per annum. In certain circumstances a child allowance of K156 per annum is also payable. An educational allowance and additional leave may be provided for children being educated away from their parents' place of residence. Other benefits include furnished housing (hard goods only) supplied at nominal rental, leave fares to place of recruitment every second year and equivalent fares to Canberra, Australia, each alternate year and six weeks' annual leave. Superannuation is contributory at 6 per cent. Study leave of 6 months will accrue after three years' service. Taxation is presently two-thirds of that applicable in Australia.
Appointments will be on a contract basis for a maximum of three years in the first instance.
Applications in duplicate should include number of post applied for, particulars of age, nationality, marital status, family if any, qualifications, experience, present post and the names and addresses of three referees from whom confidential enquiries can be made.
The University reserves the right to make no appointment or to make an appointment by invitation at any stage.
Further information will be forwarded to all applicants. Applications are required by 30 September, 1975, and should be sent to the Registrar, The Papua New Guinea University of Technology, P.O. Box 793, LAE, PAPUA NEW GUINEA. An additional copy should be sent to the Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, or from the Association of Commonwealth Universities, Bundoora, Victoria.

MURDOCH UNIVERSITY

Perth, Western Australia

Murdoch University, Western Australia's second university, admitted its first students in February, 1975. The University is committed to taking a fresh approach to higher education, with the goal of responding directly to the conditions and needs of the late twentieth century. This is reflected in adventurous policies, organisational structures, programmes of study, philosophies of teaching and recruitment of staff.
The University is organized on a system of schools of study, with the Chairman of each school having both academic and administrative responsibility.
Applications are invited from suitably qualified persons for the following positions which are to be taken up in January 1976, or as soon thereafter as possible.

SCHOOL OF ENVIRONMENTAL & LIFE SCIENCES
(Chairman Professor J. F. Lonnergan)

The School of Environmental & Life Sciences is responsible for the University's programmes of study in Environmental Science and in Biology. Besides their teaching duties, appointees will be expected to engage actively in research, and, in the case of lecturers to supervise Honours and postgraduate students. Appointees may be required to assist in preparing courses for external students.

LECTURESHIP/SENIOR LECTURESHIP IN BIOLOGY (Animal Behaviour) [EH.03141]
The appointee will be expected to develop and teach Part II courses in Animal Behaviour within the Biology programme, and to contribute to Part I courses in Biology and interdisciplinary studies. The courses in Animal Behaviour will cover aspects relevant to Biology, Veterinary Biology, and Peace & Conflict Studies.

LECTURESHIP/SENIOR LECTURESHIP IN BIOLOGY (Animal Genetics) [EH.03171]
The appointee will be expected initially to formulate and teach a Part II course in Animal Genetics to students of Veterinary Biology, and subsequently to help develop courses in Genetics or Population Dynamics for Biology Students. The appointee may also be required to assist in Part I courses such as Human Biology, Cell Biology and Interdisciplinary courses.

LECTURESHIP/SENIOR LECTURESHIP IN ENVIRONMENTAL ENGINEERING [EH.02901]
The appointee will assist in the development of courses and research in Environmental Science with particular emphasis on solid, liquid, and gaseous waste treatment, recycling, and pollution analysis. A contribution to external studies and other interdisciplinary courses within the University will also be required.
Teaching of experience in the mineral recent methods of environmental engineering applied to analysis, treating and recycling of wastes is expected. The appointee should be primarily an engineer, and research experience equivalent to Ph.D. level is necessary.
It is expected that the appointee will have some sympathy with the human and social aspects of the environment and an ability to evaluate technology in this light.

SCHOOL OF MATHEMATICAL & PHYSICAL SCIENCES
(Chairman Professor A. J. Parker)

The School contains chemists, physicists, mathematicians and mineral scientists working together to provide a variety of general and specialist science based activities for Part I courses. Most Part I students are involved with one or more of these courses. A major activity for Part II programmes and postgraduate work involves teaching and research in areas of relevance to the mineral industry especially mineral processing.
The School recognises the need for non-specialist scientist and multi-disciplinary activities embracing the physical, life environmental and earth sciences as well as the humanities.
Mathematics, and statistics courses will be presented with a view to meeting the requirements of a variety of programmes.

LECTURESHIP/SENIOR LECTURESHIP IN MATHEMATICS [EH.03191]
As well as contributing to the general teaching of mathematics within the University, the person appointed will be expected to participate in the development of courses in mathematical methods and differential equations, which will be available as service courses within the School. Subject to this, applicants may have research interests in any relevant branch of mathematics.

SCHOOL OF VETERINARY STUDIES
(Chairman Professor R. H. Dunlop)

The School of Veterinary Studies has two interrelated divisions—Veterinary Biology and Applied Veterinary Medicine. The latter will provide an understanding of the functions and function of the animal body, of the causes and nature of disease and of the drugs used in prevention and treatment of disease. The Division of Applied Veterinary Medicine covers all aspects of medicine, surgery, animal production and public health.
Applications are invited for positions in the following fields within the Division of Veterinary Biology. These are initial appointments within these areas:

LECTURESHIPS/SENIOR LECTURESHIPS IN			
PATHOLOGY	(EH.03211)	VIROLOGY	(EH.03221)
PARASITOLOGY	(EH.03231)	ENTOMOLOGY	(EH.03241)
PHARMACOLOGY	(EH.03251)	TOXICOLOGY/CHEMICAL PATHOLOGY	(EH.03261)

Duties include participation in the second part of the Veterinary Biology programme leading to an understanding of the causes of disease, the nature of disease processes and the use of drugs in the prevention and treatment of disease. The successful applicants will also make contributions to the Applied Veterinary Medicine programme in later years of the course.
Candidates will be expected to have an active research interest. A multi-disciplinary approach to research will be encouraged. A diagnostic service will be established for the clinics which will begin to operate in 1977. Routine diagnosis duties will be on a rota basis. Forty-eight veterinary students will enter the first part of the Veterinary Biology programme in March, 1976. Most of the staff responsible for this part of the programme are now assembled and course planning is in its final stages.
The Chairman of the School is Professor R. H. Dunlop. The Chairman of the Division of Veterinary Biology is Professor J. McG. Howell.

SCHOOL OF SOCIAL INQUIRY
(Chairman Professor J. R. Rees)

The School of Social Inquiry has responsibility for Part II Programmes in Economics, Human Development and Peace and Conflict Studies. New Programme areas are being explored and will be added during the next few years. In addition the School has prime responsibility for the Part I foundation courses, World in Transition, responsibility for the Part I courses Great Ideas About Man and Society, Women in Society, Foundations of Social Inquiry, and various "Introductory" courses for the Part II programmes, and also contributes to Programmes in Population and World Resources, Environmental Science, Mineral Science, Communication Studies, Primary and Secondary Teacher Education and Cultural Studies.

LECTURESHIPS/SENIOR LECTURESHIPS (Two General Positions)	
LECTURESHIP/SENIOR LECTURESHIP IN ECONOMICS	(EH.0128 & EH.0227)
	(EH.0228)

Applications are now invited from qualified persons to assist with the Programmes mentioned above. (i) If earlier interest will be persons with backgrounds and experience in Sociology, Social Psychology, Economics, Anthropology, and Politics, while an interest in interdisciplinary approaches and in social science methods is an advantage. Duties will include teaching in general first year and advanced courses, supervising research students, tutoring external students, and assisting in the development of courses and new programmes.
In addition to the two general positions applications are called, in particular, for the position of Lecturer/Senior Lecturer in Economics. SALARY RANGES: Lecturer $A13,849 to $A15,849; Senior Lecturer $A15,954 to $A18,544. Appointments will normally be made at the lecturer level but in the case of an outstanding applicant consideration will be given to an appointment at the senior level. Conditions of Appointment include superannuation, similar to U.S.S.U., long service leave, sabbatical study leave, payment of fares to Perth for appointee and dependent family, removal and settlement allowances and housing loan scheme.
APPLICATIONS: Two complete sets of detailed applications, quoting the appropriate reference number, including full personal particulars; details of tertiary qualifications; recent history with descriptions of posts held; area of special competence and interest; research completed or currently being undertaken; personal views on teaching, list of relevant material published by the applicant; when available to take up appointment. If offered and the earnest and addresses of three referees (referees should be contacted only if the applicant is willing to be asked) should reach the Personnel Officer, Murdoch University, Murdoch, Western Australia, 6153, by 29 August 1975.
NOTE. Applicants resident in the United Kingdom, Europe or Africa

Universities continued

AUSTRALIA
THE AUSTRALIAN NATIONAL UNIVERSITY
SENIOR LIBRARIAN
Grade 3
(University Library)
Applications are invited for the position at Divisional Librarian in charge of the Chifley Building of the University Library.
Principal duties will include supervision and development of reader services to undergraduate and postgraduate students, lecturers and research workers in the Faculties of Arts, Asian Studies, Economics and Science. Current developments include the establishment of a high use collection, the introduction of audio visual services in co-operation with the Instructional Resources Unit and the provision of research materials to support the Humanities Research Centre. Central Services already support inter-library loans, the Library Loans Unit and the Library Binery.
The successful applicant will have full administrative responsibility for the day-to-day running of the services in the Chifley Building and will supervise the operations of all staff. Full time staff at the present time number 34, plus a pool of approximately 937,000 volumes serve undergraduate students, teaching staff and postgraduate research. Specialist experience in one or more of the following areas is desirable: Reference, Acquisitions, Cataloging, Serials, Circulation, Reprography, Bibliography, Information Retrieval, Administration.
Salary according to qualifications and experience within the limits $A11,417-$A16,744 per annum (Aust.).
Assistance with passages and accommodation will be provided to the successful candidate.
Written applications, quoting reference number 75/Chifley, should be forwarded to the Registrar, The Australian National University, G.P.O. Box 4, Canberra A.C.T. 2601, with whom applications close on 1 August 1975. (T. W. B. Hamilton, Librarian.)

AUSTRALIA
THE AUSTRALIAN NATIONAL UNIVERSITY
SENIOR LIBRARIAN
Grade 1 or 2
(Life Sciences Library)
Applications are invited for the above position in charge of the Life Sciences Library now under construction and to be opened in late 1976. The library will have approximately 80,000 volumes. Interest in any aspect of research in the doctoral and post-doctoral type is desirable. The School of Biological Sciences as well as the science lending and research in the Faculty of Science.
Principal duties will include the supervision of all reader services, the acquisition and organization of library materials, information retrieval services and reference work, reader services derived from ANU/ANZ and BIS. Programmes are already in operation. Applicants should be prepared to take part of the senior library administration and will work closely with the central services.
Applicants should possess a degree, preferably in the life sciences, professional library qualifications and considerable relevant experience.
Salary according to qualifications and experience within the limits $A11,417-$A16,744 per annum.
Assistance with passages and accommodation will be provided to the successful candidate.
Written applications, quoting reference number 75/Life, should be forwarded to the Registrar, The Australian National University, G.P.O. Box 4, Canberra A.C.T. 2601, with whom applications close on 1 August 1975. (T. W. B. Hamilton, Librarian.)

ASCOT
THE UNIVERSITY
LECTURESHIP IN MODERN HISTORY
Applications are invited for this post, tenable from the commencement of the academic year in 1976 (or later) at the salary scale for lecturers with superannuation benefits. Further particulars may be obtained from the University Secretary, the University, Ascot, to whom applications should reach by 16th August, 1975.

BATH
THE UNIVERSITY
SCHOOL OF ENGINEERING
POST-DOCTORAL RESEARCH
Applications are invited for the School of Research Fellowship in the Department of Mechanical Engineering. The successful candidate will be required to undertake a project in mechanical engineering. The project is concerned with the application of computer aided design and manufacture to sheet metal forming. Research experience in the application of computers to be an advantage.
Applicants should hold a degree in Mechanical Engineering or equivalent in Electrical Engineering, preferably with experience in computer programming.
Salary: £2,470 plus threshold payments.
Applicants should have a degree in Electrical Engineering or equivalent, preferably with experience in computer programming.
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Salary: £2,470 plus threshold payments.
Applicants should have a degree in Electrical Engineering or equivalent, preferably with experience in computer programming.
Salary: £2,470 plus threshold payments.
Applications should be addressed to the Personnel Officer, The University, Bath, from whom further particulars may be obtained.

BATH
THE UNIVERSITY
SCHOOL OF ELECTRICAL ENGINEERING
RESEARCH OFFICER
Applications are invited for a post in the School of Electrical Engineering on a project concerning the application of student modelling techniques to computer based teaching systems.
Salary: £2,470 plus threshold payments.
Applications should be addressed to the Personnel Officer, The University, Bath, from whom further particulars may be obtained.

BATH
THE UNIVERSITY
SCHOOL OF ENGINEERING
RESEARCH OFFICER
Applications are invited for a post in the School of Engineering on a project concerning the application of computer aided design and manufacture to sheet metal forming. Research experience in the application of computers to be an advantage.
Salary: £2,470 plus threshold payments.
Applications should be addressed to the Personnel Officer, The University, Bath, from whom further particulars may be obtained.

Universities continued

BATH
THE UNIVERSITY
SCHOOL OF BIOLOGICAL SCIENCES
EXPERIMENTAL OFFICER

Applications are invited from biochemists and cell biologists for the post of Experimental Officer to carry out work on structure/function relationships in yeast. The appointment is for two years and is sponsored by the Science Research Council.

Applicants should possess an Honours Degree or equivalent qualification in a relevant discipline.

Salary is the range £2,013 to £3,414 per annum (under review).

Application forms obtainable from the Personnel Officer (University of Bath), Bath BA2 7AY, quoting reference 75/113 (BLS), to be returned by August 18th 1975.

BELFAST
THE QUEEN'S UNIVERSITY
LECTURESHIP IN ZOOLOGY

Applications are invited for a LECTURESHIP in the DUTIES of ZOOLOGY (available from 1st January, 1976 or such other date as may be arranged). Applicants should have an interest in the mechanism of animal behaviour. Initial salary, dependent upon experience and qualifications, will be at one of the first three points on the scale for lecturers, namely: £2,118 or £2,247, £2,376 which rises to £3,966 with threshold payments of £399 per annum and contributory superannuation under the USS(FB). The appointment will be for a period of one year in the first instance but renewal of tenure of an in three years is envisaged. Assistance with removal expenses is available.

Applications should be received by 15th August, 1975. Further particulars may be available from the Personnel Office, The Queen's University of Belfast, Belfast, Northern Ireland BT7 1NN. Please quote reference number 75/108.

BELFAST
THE QUEEN'S UNIVERSITY
LECTURESHIP IN PURE MATHEMATICS

Applications are invited for the post of LECTURER in PURE MATHEMATICS tenable from 1st October, 1975 or such other date as may be arranged.

Salary scale (under review): £2,118 to £4,896 with contributory pension under USS (Superannuation Scheme for Universities). Initial placing on the salary scale will depend on qualifications and experience. Assistance is available with removal expenses.

Further particulars may be obtained from The Personnel Officer, The Queen's University of Belfast, BT7 1NN, Northern Ireland, by whom completed applications should be received not later than 6th September, 1975. (Please quote Ref. 75/105).

BIRMINGHAM
THE UNIVERSITY OF ASTON
MANAGEMENT CENTRE
LECTURER IN LAW

Applications are invited for the appointment of Lecturer in Law (to be taken up as soon as possible) in the Management Centre. Studies subject group. The successful candidate will be a member of a team teaching on undergraduate, postgraduate and sandwich courses covering mainly within the faculty of Management.

It would be an advantage to have a specialist interest in one of areas of the following subjects: Commercial Law, Company Law, Employment Law.

Candidates will be expected to have a good Honours degree in Law or equivalent qualification. Applications from recent graduates will be considered.

Salary scale: With effect from 1st October, 1975 the salary for the above post will be on the scale for lecturers, namely: £2,118-£2,247 per annum, plus £243.50 threshold payment, the commencing salary will be within the scale £2,247 per annum, plus £243.50 threshold payment. The appointment is that they will be subject to whatever flat rate living increase becomes payable in addition from 1 October, 1975.

Requests for further details and application forms should be addressed to the Staff Officer, Personnel Office, Aston Science Centre, 562 Upper Dartmouth Road, Birmingham, B6 7DS, quoting reference 75/105. Completed application forms should be returned as soon as possible.

BIRMINGHAM
THE UNIVERSITY
CENTRE OF WEST AFRICAN STUDIES
TEMPORARY LECTURESHIP IN AFRICAN HISTORY

Applications are invited for a temporary appointment as Lecturer in African History. The appointment will be for one year from 1st October, 1975. In the first instance it may be renewable for a second and third year. Applicants will be expected to be prepared to teach courses relating to the history of the Guinea Zone of West Africa.

Salary: within the first six points of the lecturer scale: £2,118 (£2,247 under review). This threatens payments, plus superannuation.

Applications (three copies) quoting reference 75/106 to the Assistant Registrar (Appointments), The University, Birmingham B15 2TT, by Friday, 1st August, 1975, or if none, to the Assistant Registrar (Appointments), The University, Birmingham B15 2TT, quoting reference 75/106 in the case of telephone enquiries.

BRADFORD
THE UNIVERSITY
POSTGRADUATE SCHOOL OF STUDIES IN SOLAR ENERGY SCIENCE AND CONTROL ENGINEERING

Applications are invited for RESEARCH ASSISTANT to work on an S.R.C.-sponsored project in the Department of Control of Environmental Processes. Applicants should have research experience in the fields of or other postgraduate research experience in the fields of electrical engineering, chemical engineering, mathematics, or engineering. The post is for two years, from October, 1975, at a salary within range £2,350 to £2,964 per annum (under review). Superannuation. Applicants should send application forms to the Registrar, University of Bradford, Bradford, West Yorkshire BD7 1DP, quoting ref. 75/114.

BRADFORD
THE UNIVERSITY
LECTURER IN EUROPEAN HISTORY

Applications are invited for the above post from appropriate candidates with a specialist knowledge of the nineteenth and twentieth centuries. Starting date: October, 1975 or such other date as may be arranged. Salary scale £2,118-£4,896 per annum (under review). Superannuation.

Further particulars and application forms (to be returned by 8 August) from the Registrar, Ref. C/15/1/75/111, University of Bradford, West Yorkshire BD7 1DP.

BRADFORD
THE UNIVERSITY
RESEARCH STUDENTSHIPS IN BIOCHEMISTRY

Applications are invited for three-year postgraduate studentships, tenable from 1st October, 1975, sponsored by SRC for research in theoretical biochemistry. Candidates should have a first or upper second class degree in biochemistry, biophysics, food science, chemistry, chemical engineering or physics. Applications should be addressed to the Registrar, University of Bradford, Bradford, West Yorkshire BD7 1DP, quoting ref. 75/113 (BLS).

BRADFORD
THE UNIVERSITY
TEMPORARY LECTURER IN MATHEMATICS

Applications are invited for this one year post commencing on October, 1975. Qualifications and experience to teach in the foundations of mathematics (analysis) courses. Salary within scale £2,118-£4,896 (under review). Superannuation. Applicants should send application forms to the Registrar, University of Bradford, Bradford, West Yorkshire BD7 1DP, quoting ref. 75/112.

BRITISH ACADEMY SAVE CARTHAGE COMMITTEE

Applications are invited for the post of RESEARCH ASSISTANT to work on the publication of excavations from the British Carthage Excavations. Applicants should have an honours degree in archaeology, including (minimum) a classical studies and experience of handling pottery from Mediterranean sites.

Applications should be sent by 1st August to Dr O. H. Peacock, Department of Archaeology, University, Southampton, SO9 5NH, from whom further particulars can be obtained.

CANADA
DALHOUSIE UNIVERSITY
Halifax, Nova Scotia
SOCIOLOGY

Applications are invited at the ASSOCIATE or full Professor level, for appointments commencing July 1, 1976. Fields are open. Preference will be given to applicants with Canadian experience. Salary and fringe benefits competitive.

Please direct inquiries and applications to Michael Aaronson, Chairman, Sociology Department, Dalhousie University, Halifax, Nova Scotia.

Applicants are asked to send a curriculum vitae and arrange for three letters of reference.

CENTRE FOR ENVIRONMENTAL STUDIES
APPLICATIONS OF THE DEPUTY DIRECTOR AND RESEARCH FELLOWS

The Centre requires TWO research fellows to undertake analysis of spatial aspects of changes in the two countries and their implications for social and economic policies, employment, and distribution. One fellow is required for a period of three years, the other for more than a year, but not more than two years. One of the fellows should have good qualifications in the social sciences and several years of research experience. One should have a knowledge of Spanish and one, preferably the other, must have a good knowledge of German. Preference will be given to candidates with some experience of working in a team on housing policies and statistics.

The senior post will be on the Scale 4 (£4,896-£5,496) Deputy Director (£5,496-£6,096) and the other post on the Scale 1 (£2,118-£4,896). Superannuation. Salary will be paid on superannuation.

Further particulars and application forms may be obtained from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, or the Assistant Registrar (Recruitment), University of Hong Kong, Hong Kong.

Closing date for applications: 8 30th August, 1975.

IRELAND
UNIVERSITY COLLEGE DUBLIN
APPOINTMENT IN MATHEMATICS

Applications are invited for a post on the Academic Staff of the Department of Mathematics in Probability/Statistics or allied fields.

The current salary scales are in the range College Lecturer: £4,050 to £6,300; Assistant Lecturer: £2,757 to £4,881.

These scales are offered in accordance with the National Wage Agreement. Entry point on the appropriate scale will be in accordance with qualifications and experience. Superannuation. Salary position and family allowances are additional to salary. An alternative contributory 1963 type scheme is also available.

Prior to application, further information (including details of application procedure) may be obtained from: Mr. J. F. Mackin, Secretary and Registrar, University College, Belfield, Dublin 4 (telephone 693474 extension 231).

Latest date for receipt of completed applications is Friday, 22nd August, 1975.

LONDON
IMPERIAL COLLEGE
LECTURER IN ENGINEERING DESIGN

Applicants should have a good first degree in chemical engineering or mechanical engineering and have had experience in the design of equipment in the chemical industry. Adequate background knowledge of computing and of materials technology and properties is a desirable factor. In successful candidate will be expected to assist in both undergraduate and postgraduate teaching.

Applicants, with full curriculum vitae and list of publications, together with the names of three referees, should be addressed to the Head of Department, Chemical Engineering and Chemical Technology, Imperial College, Prince Consort Road, London SW7 2BY.

KEELE
THE UNIVERSITY
LECTURER IN LAW

Applications invited for post of LECTURER in ENGLISH LAW from 1st October, 1975, or as soon as possible thereafter, to assist in teaching the Law Degree Scheme. Salary scale on contract: lecturer and/or assistant lecturer.

Appointment on first three years. Commencing salary £2,118 to £2,412 plus threshold payments (under review).

Application forms and further details to the Registrar, Keele, Staffs ST5 5BG, to whom completed forms should be returned by 8th August, 1975.

GAMBRIDGE
THE UNIVERSITY
SOCIAL AND POLITICAL SCIENCES COMMITTEE

Applications are invited for a PROFESSOR or postgraduate position as SENIOR ASSISTANT/ASSISTANT RESEARCH in work in the area of language and social behaviour. Applicants should have had training and experience in social psychology and/or linguistics.

The post, funded by S.S.R.C., is for two years, from October, 1975. Salary in range £2,050 to £2,964, plus threshold and superannuation.

Applications, with names of two referees, to Dr. C. Fraser, Secretary, Political Research Committee, Sidgwick Building, Mill Lane, Cambridge CB2 1RX (023 354811).

EDINBURGH
THE UNIVERSITY
CAREERS ADVISER

Applications are invited for the post of Careers Adviser in the Careers and Appointments Advisory Service. A specific responsibility will be to assist students in the Department of Chemistry, Natural Philosophy (Physics), and the School of Biological sciences. The position is available on vacation, must be graduate, preferably in a physical or biological science, or of British University age graduate between 25-35, with relevant experience in one or more fields of graduate employment. Available from 1 September. Additional duties, or experience in advisory and counselling work, would be an advantage but this is not essential.

Salary: £3,996 p.a. - £4,116; £4,248 p.a. - £5,013; £5,898 p.a. - £6,996 (under review). Superannuation.

Applications, by three copies, should be sent forthwith with the names of two referees to the Secretary in the University of Edinburgh, South Bridge, Edinburgh, EH8 9YL, from whom further particulars may be obtained. The closing date for applications is Wednesday, 30th July, 1975. Please quote reference 4014.

HONG KONG
THE UNIVERSITY
CHAIR OF COMPARATIVE LITERATURE

Applications are invited for this post, in which the chair is the Department of English Studies and Comparative Literature. Candidates should have established qualifications in English and one other European literature but the teaching activities will focus on the main traditions of English and European literature. Candidates should preferably be interested in problems of the relations and function of literature and the discussion of these in the study of one European literature or of one or more genres.

Salary according to qualifications will be within the range Professor £8,000 to £8,384 per annum (£8,384 per annum after review), for married appointees £1,100 to £1,300 per annum (sterling) for single appointees (normally free of all tax) and provide children's education allowance and free half-yearly visit passages. F.R.S.U.; family passages; various allowances.

Detailed applications (two copies) including a curriculum vitae and naming three referees, should be sent by airmail not later than 30 August, 1975, to the Registrar, University of Hong Kong, P.O. Box 2591, Hong Kong, from whom further particulars may be obtained from either address.

JAMAICA
UNIVERSITY OF THE WEST INDIES

Applications are invited for the following posts in the School of Education:

(1) LECTURER/ASSISTANT LECTURER in the teaching of HOUSEHOLD SCIENCE (Ref. HS). Applicants should have a postgraduate qualification in Education and some teaching experience. The appointee will be expected to assume duties as soon as possible.

(2) RESEARCH FELLOW/JUNIOR RESEARCH FELLOW in the teaching of MATHEMATICS. Applicants should have a degree in Mathematics with a University Diploma in Education. The appointee will be required to investigate problems relating to mathematics curricula in schools and to prepare and continue appropriate materials for development of mathematics teaching.

Salary scales (under review): Lecturer/Research Fellow: J$9,168 to J$9,768 per annum; Assistant Lecturer/Junior Research Fellow: J$5,088 to J$5,964 per annum (£1 sterling equals J$1.40). Subsidy and travel grant. Unfurnished accommodation at rent of 10 per cent of salary for single officers and at the rate of 20 per cent of salary payable for the hire of housing. Family passages.

Detailed applications (six copies), including a curriculum vitae and naming three referees, should be sent by airmail, as soon as possible, to the Registrar, University of the West Indies, Kingston 7, Jamaica. Detailed particulars are available and should be obtained from the same source before an application is made.

KENYA
UNIVERSITY OF NAIROBI

Applications are invited for the posts of PROFESSOR and ASSOCIATE PROFESSOR of LIBRARIANSHIP. Applicants should hold a Ph.D. or equivalent and have considerable teaching experience backed by publications. The appointees may be expected to chair the department, and also guide teaching and research at both undergraduate and postgraduate levels in the following areas: African literature; Oral literature; Caribbean and Afro-American literature; Latin American and literature from the Third World; European and American literature.

Salary scales: Professor KE3,600 to KE4,368 per annum; Associate Professor KE2,904 to KE3,384 per annum (KE1 equals £1.11 sterling). The British Government may contribute to some extent towards salaries for married appointees (£1,100 to £1,300 per annum (sterling) for single appointees) normally free of all tax) and provide children's education allowance and free half-yearly visit passages. F.R.S.U.; family passages; various allowances.

Detailed applications (two copies) including a curriculum vitae and naming three referees should be sent by airmail not later than 30 August, 1975, to the Registrar, University of Nairobi, P.O. Box 30197, Nairobi, Kenya (accurate reference to U.K. should also be sent to the Secretary, University Council, 90/91 Piccadilly, London W1V 9PD). Further particulars may be obtained from either address.

LANCASTER
THE UNIVERSITY
RESEARCH ASSOCIATE IN ENGLISH for SPECIAL EDUCATION

Applications are invited for the post of Research Associate in the Department of Linguistics and Modern English Language, to work on a project on the research in the spoken language of children in schools, under the direction of Mr Christopher Candlin (author of the analysis of the spoken discourse of teacher and pupil, and its application and into associated pedagogical materials for non-native English speaking children). The post is for a three year project, which is financed by the British Council, to be closely related to the Communication Skills in English programme at the King Abdul Aziz University, Jeddah, Saudi Arabia.

Candidates should possess considerable relevant TEFL experience with an emphasis on English for special purposes, and should have a postgraduate qualification in or relevant to Applied Linguistics.

The appointment will be for a period of 19 months from September, 1975 (or at least from October 1st, 1975).

Salary according to qualifications and experience, in the range £4,206 (subject to cost of living increase).

Further particulars may be obtained from the Administrative Officer, Bowland House, Lancaster LA1 4YT, quoting reference 3/3/1, to whom applications (six copies) should be addressed (six copies) stating age, nationality and qualifications, and giving the names of three referees, not later than 8th August, 1975.

LONDON
THE CITY UNIVERSITY
St John Street, London EC1V 4PB
UNIVERSITY APPOINTMENTS SERVICE

Applications are invited for the post of INFORMATION OFFICER in the University Appointments Service. Qualifications: Experience of careers guidance work will be a distinct advantage. But candidates, preferably graduates, should also have administrative skills and the ability to type.

Salary: according to age and experience will be within the range £2,184 to £2,654 (under review) plus £416 London Allowance and Threshold Payments.

It is hoped that the successful candidate will be able to take up the appointment as soon as possible.

For application forms please write to the Personnel Officer at the above address or telephone 01-253 4399 extension 348. Completed application forms should be returned as soon as possible.

LONDON
THE UNIVERSITY
LONDON SCHOOL OF ECONOMICS

Applications are invited for a research post on a project directed by Professor Hide Hamilton-Grant in the Department of Cognition and Social Behaviour, to study the changes over time using primarily existing longitudinal survey data. Applicants should will be expected to have a degree in psychology or social sciences, interest in theoretical formulations, thorough quantitative approaches, multivariate analysis, multidimensional analysis, experience in using statistical packages and ability to write. Appointment for 2½ years from 1st October, 1975. Closing date: 1st September. Anonymous and confidential. Salary scale £3,745 and £3,889 per annum; superannuation; allowances also payable. The salary scale is under review; the arrears the starting salary, consideration will be given to age, experience and qualifications.

Applications should be received not later than 31st August, 1975, by the Administrative Officer, Room D.810, London School of Economics, Houghton Street, London WC2A 2AE, from whom application forms may be obtained.

LONDON
THE UNIVERSITY
LECTURER IN ECONOMETRICS

Applications invited for this post, tenable from 1st October, 1975, on a scale of salaries for lecturer in the range £2,118 to £4,896 per annum (£2,247 to £4,896 under review) plus superannuation.

Further particulars and application forms (returnable by August 1st) from the Registrar, Ref. 3/3/1, The London School of Economics and Political Science, Houghton Street, London WC2A 2AE, to whom completed application forms may be obtained.

LEEDS
THE UNIVERSITY
DEPARTMENT OF ECONOMICS
RESEARCH ASSISTANT

Applications invited for the post tenable from 1st October, 1975, or as soon as possible thereafter, to assist in the preparation of a book on the economic history of the Leeds region. Applicants should have a degree in Economics or Economic History and preferably a knowledge of the sources and methods of local economic history. Salary within the range £1,670 to £2,247 per annum (under review) according to age and experience. Superannuation.

Applications, with the names of two referees, should be addressed to the Secretary, Department of Economics, University of Leeds, Leeds LS2 9JT, quoting reference number 3873.00.

Closing date for applications: 8th August, 1975.

Applications for the post advertised immediately previous also will be considered.

LONDON
THE UNIVERSITY
UNIVERSITY ENTRANCE AND SCHOOL EXAMINATIONS COUNCIL
GENERAL CERTIFICATE OF EDUCATION EXAMINATION

The Council invites applications for appointment as Assistant Examiner in GCE Advanced Level MATHEMATICS in the Examination in which subject from December, 1975.

Applicants should be graduates with a strong interest in the teaching of mathematics and preferably some experience of teaching and/or examining at Advanced Level.

The appointment will be for a period of 19 months from September, 1975 (or at least from October 1st, 1975).

Salary according to qualifications and experience, in the range £4,206 (subject to cost of living increase).

Further particulars may be obtained from the Administrative Officer, Bowland House, Lancaster LA1 4YT, quoting reference 3/3/1, to whom applications (six copies) stating age, nationality and qualifications, and giving the names of three referees, not later than 8th August, 1975.

NEWCASTLE UPON TYNE
THE UNIVERSITY
JUNIOR RESEARCH ASSOCIATE

Applications are invited for a position as junior research associate to participate in a research project in beauty and aesthetics. Work will be little programmatic of data collection and analysis. Some experience with computers is necessary. Ability to speak Russian would be an advantage. Salary range is between £1,670 and £2,797 per annum (under review) and employee is to be on one year to five year contract, for instance the appointee may apply to proceed to a Ph.D. degree. Applicants should be a part-time postgraduate student or be willing to register.

Further details or application forms from Dr. Hilary Fraser, Lecturer in Aesthetics, Department of Education, Sociology and Education, University of Newcastle upon Tyne NE1 7RU, quoting ref. 3/3/1, to whom completed application forms should be returned as soon as possible.

NEW ZEALAND
VICTORIA UNIVERSITY OF WELLINGTON
SENIOR LECTURESHIP IN LEGISLATIVE LAW

Applications are invited for several appointments to the Faculty of Law from persons qualified in any area of legislative or administrative law. Salary according to qualifications and experience: Senior Lecturer $NZ12,000 to $NZ14,000 per annum. Lecturer $NZ9,000 to $NZ12,000 per annum. There are at present 19 full-time members of the Law Department of Victoria University of Wellington. The Department is strong in the teaching of Jurisprudence, Constitutional Law and Administrative Law. The Law Department of Victoria University is also actively considering the introduction of a course of Legislative Drafting. There are at present in the Department no lecturers in Legislative Law. Victoria University of Wellington is the capital city of New Zealand and is the seat of the Government, Parliament and Supreme Court. Victoria University of Wellington is a residential university of approximately 4,000 students. Further particulars may be obtained from the Registrar, Victoria University of Wellington, Wellington, New Zealand.

Closing date for applications: 1st September, 1975.

SHEFFIELD
THE UNIVERSITY
LECTURER IN MUSIC

Applications invited for the post tenable from 1st October, 1975, or as soon as possible thereafter, initial salary in the range £2,118 to £4,896 per annum (under review) plus superannuation.

Applications (six copies) stating age, nationality and qualifications, together with the names of three referees, should be addressed to the Registrar, The University, Sheffield S10 2TN, from whom further particulars may be obtained.

Application forms may be obtained from the Registrar, The University, Sheffield S10 2TN, quoting ref. 3/3/1, to whom completed application forms should be returned by August 15, 1975.

Universities continued

EAST ANGLIA
THE UNIVERSITY
Norwich

Applications are invited for two posts in MODERN HISTORY (Ref. 3/3/1) and Hispanic Studies. One post will be on the Lecturer scale while the other may be on the Lecturer or Senior Lecturer, Reader scale. Both posts will involve teaching German and Spanish literature and culture.

Salary scale £2,118-£4,896 plus £399 threshold payments. A superannuation scheme is available for both. Appointment in one of the posts will be initially within the first five points of the Lecturer scale (£2,118 to £2,757). The successful applicants will be expected to take up their duties on 1 January, 1976, or such earlier date as may be arranged.

Lecturer scale £2,118 to £4,896 (under review). Lecturer/Senior Lecturer scale: £2,757 to £5,775. Scales under review.

Details from Establishment Officer, University of East Anglia, Wilkins Building, Norwich, Norfolk NR4 7TJ, to whom applications (two copies) should be sent, quoting the name of at least two academic referees, not later than 20 August 1975.

OXFORD
THE UNIVERSITY
UNIVERSITY LECTURESHIP IN GEOGRAPHY

The University proposes to appoint, as soon as possible, a University Lecturer in PHYSICAL GEOGRAPHY.

The lecturer will be required to engage in advanced study or research, and to work under the direction of the Board of the Faculty of Geography and Geography not less than 36 hours a week for such periods in each year, normally spread over not less than six weeks of each term.

The stipend will be according to age on the scale currently under review: £2,118 per annum at age 20 or under, rising to £3,256 per annum at age 30 or over, plus £19,34 per month threshold payments.

Superannuation is required to be contributed to a superannuation scheme as prescribed by the statutes and decrees of the University.

The successful candidate will be required to assume duty as soon as possible.

Intending applicants may obtain a copy of the information sheet relating to this post from the London Representative, University of Oxford, 9 Marlborough Place, Oxford Street, London W.C.1. Applications should be lodged with the Registrar, University of Oxford, Wilkins Building, Banbury Road, Oxford OX2 6PN, not later than 20th September, 1975.

NIGERIA
UNIVERSITY OF IFE

Applications are invited for the post of Temporary LECTURER in BIOLOGY (LECTURER/SENIOR LECTURER/READER/PROFESSOR). Applicants should have a good honours degree in Biological Sciences. Applicants should have a good knowledge of the undergraduate training and industrial experience in electro-magnetic, magnetic gravity and electrical methods of prospecting. The appointees will be expected to undertake intensive research programmes.

Salary is as follows: Professor N$7,250-N$8,311 per annum (£1,000 per annum sterling); Senior Lecturer N$5,845-N$6,723 per annum (£1,000 per annum sterling); Lecturer N$4,763-N$5,631 per annum (£1,000 per annum sterling); Senior Research Fellow N$3,905 per annum (£1,000 per annum sterling); Research Fellow N$2,905 per annum (£1,000 per annum sterling). Superannuation and medical assistance; various allowances; regular overseas leave.

Employee contributions (two one year contracts) are required for the first two years of service. Thereafter, pensionable terms will be offered. Applications (six copies) naming three referees, should be addressed to the Registrar of the University of Ife, Ife, Nigeria.

Further particulars may be obtained from Mr A. I. Small (ref. 3/3/1), The Universities Appointments Bureau, 36 Gordon Square, London WC1H 0PF, quoting ref. 3/3/1. Further particulars may be obtained from either address.

THE OPEN UNIVERSITY
FACULTY OF SOCIAL SCIENCES
ASSISTANT LECTURER IN SOCIOLOGY

Applicants should have a degree in Sociology and a good general knowledge of the discipline. The person appointed will work initially on the foundation course, Mass Communications and Society.

The post will carry responsibility for staff administration in the course and co-ordination between course units and various Open University production departments.

Further particulars and application forms available from The Personnel Manager (OU), The Open University, Walton Hall, Milton Keynes, Bucks MK7 6AA. Telephone: Milton Keynes 74066, extension 2276.

Closing date for applications: 31 September, 1975.

ST. ANDREWS
THE UNIVERSITY
DEPARTMENT OF GEOGRAPHY

Applications are invited for a post of Temporary LECTURER in GEOGRAPHY to commence from 1st October, 1975. The starting salary within the range £3,118 to £3,412 (under review) plus superannuation. Applications (six copies) to the Secretary, The University, St Andrews, Fife, KY16 9SS, by August 15, 1975.

Further particulars are available from the Secretary, Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF.

Application closing on 1st September, 1975.

SHEFFIELD
THE UNIVERSITY
LECTURER IN ITALIAN

Applications are invited for a LECTURESHIP in ITALIAN in the Department of Hispanic Studies. Preference will be given to candidates specialising in Medieval or Renaissance Portuguese. Duties will include teaching Honours courses in Portuguese and Brazilian Portuguese.

Further particulars from the Registrar, The University, Sheffield S10 2TN, to whom applications should be addressed (six copies) by August 15, 1975.

SOUTH AFRICA
UNIVERSITY OF THE WITWATERSRAND
Johannesburg

JAN HOFMEYR CHAIR OF CLASSICS

Applications are invited for appointment to the Jan Hofmeyr Chair of Classics and the Headship of the Department of Classics. Applicants should state their qualifications in Classical Antiquity and Literature, as well as their teaching and research interests.

Applicants are also requested to state their qualifications for teaching Classical Greek and Latin, such as ancient history and philosophy or the classical tradition of the modern humanities, and their teaching ability in modern languages.

The salary scale attached to the post is R.10,800 by 480 to R.15,600 by 600 to R.15,800 (£1 equals R.1.18 approximately). The initial salary will depend on qualifications and experience of the successful applicant.

The successful candidate will be required to assume duty as soon as possible.

Intending applicants may obtain a copy of the information sheet relating to this post from the London Representative, University of Witwatersrand, 9 Marlborough Place, Oxford Street, London W.C.1. Applications should be lodged with the Registrar, University of Witwatersrand, Jan Smuts Avenue, Johannesburg, 2001, Republic of South Africa, not later than 31st August, 1975.

SALFORD
THE UNIVERSITY
CHAIR IN BIOLOGY

Applications are invited for a CHAIR in BIOLOGY in the DEPARTMENT of BIOLOGY, which will fill vacant on the retirement of Professor J. E. Kershaw on 30 September, 1976.

Candidates should have interests in some aspects of Applied Biology.

Salary will be within the professorial scale, the minimum of which is £7,901 per annum, plus a cost of living award to be announced.

Applications should be received by the Registrar, The University of Salford, Salford M5 4WT, from whom further particulars may be obtained, if required, by 1 October, 1975.

Please quote reference number 41/53/74.

SHEFFIELD
THE UNIVERSITY
DEPARTMENT OF CIVIL AND STRUCTURAL ENGINEERING

Applications invited for a post of LECTURER in Civil and Structural Engineering, tenable from 1 November, 1975, or the date thereafter. Applicants should hold a good degree in Civil Engineering, have had experience in the profession, or practice, and be interested in teaching, research in one of the main fields of Civil Engineering: Structures, Soil Mechanics, Public Health Engineering, Hydraulic Engineering, Transportation, Geotechnical Engineering and Structural Design would be welcome.

Initial salary in range £2,778 to £4,896 (under review) plus a threshold increase to £1,197 p.a. The appointment will be for 15 September or 1 October at the latest.

Further particulars may be obtained from Mr. H. Swann (Ref. 3/3/1), Southampton 559 5NH, to whom applications (seven copies) should be sent not later than 8 August, 1975. Please quote reference 300/A THES.

SOUTH AUSTRALIA
THE FLINDERS UNIVERSITY
LECTURERS IN EDUCATION (Three positions)
SCHOOL OF SOCIAL SCIENCES

Applications are invited from suitably qualified persons for appointment in the above-mentioned positions. The positions are to be filled from October this year, the other at a later date.

(1) LECTURER IN CURRICULA THEORY and PRACTICE in the Special Education. Applicants should have considerable teaching experience in one or more of the following areas: Special education, geography or Social Science. Academic qualifications in the psychology of cognition or the philosophy of curriculum or the History of curriculum development in education or other appropriate areas would be a major advantage. Duties will include organization of and teaching in multiracial courses and supervision of research in the social sciences.

(2) For this position/initial applicants should have qualifications in the sociology of knowledge or systems planning in relation to the school curriculum and/or the sociology of current and future educational strategies. Teaching experience will be an advantage.

(3) For this appointment/applicants should have the academic qualifications and the interest in one of the following groups of children: the handicapped, the mentally retarded, those with learning difficulties, hearing difficulties, medical or behavioural difficulties.

Salary scale: $A11,655 to $A15,515. Superannuation is on the F.S.S.U. basis.

Further information about the positions including conditions of appointment and details required of applicants may be obtained from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF, Applications should be lodged in duplicate, with the Registrar, The Flinders University of South Australia, Bedford Park, South Australia, 5042 by 31st August 1975.

SOUTHAMPTON
THE UNIVERSITY
DEPARTMENT OF FRENCH

Applications are invited for a temporary LECTURESHIP in the DEPARTMENT of FRENCH for one year. Candidates should have a good honours degree in French or equivalent qualifications and special interests in the study of modern French literature and language. Ability to teach French to students with no previous knowledge of the language would be welcome.

The initial salary will be on the first point of the lecturer scale (£2,118) rising by annual increase to a level of £2,757. The appointment will be for 15 September or 1 October at the latest.

Further particulars may be obtained from Mr. H. Swann (Ref. 3/3/1), Southampton 559 5NH, to whom applications (seven copies) should be sent not later than 8 August, 1975. Please quote reference 300/A THES.

SOUTHAMPTON
THE UNIVERSITY
TWO TEMPORARY LECTURESHIPS IN SOCIAL STATISTICS

Applications are invited for two temporary lectureships in the Department of Social Statistics commencing 1st October, 1975. Candidates should have a good Honours degree in Mathematics or Statistics and an interest in the application of statistical methods in social research. Preference will be given to those with a special interest in one of the following fields: social statistics, survey methodology, statistical models or social science, statistical mathematics, multivariate data analysis.

One post is for two years, with a strong expectation for a further year. Initial salary, according to qualifications and experience, on the Lecturer scale (£2,118 to £2,757) plus threshold payments (under review). Superannuation.

The second post is for two years. Appointment, according to qualifications and experience, on the Lecturer scale (£2,118 to £2,757) plus threshold payments (under review). Superannuation.

Further particulars may be obtained from Mr A. I. Small (ref. 3/3/1), The Universities Appointments Bureau, 36 Gordon Square, London WC1H 0PF, to whom applications (seven copies) should be sent not later than 7th August, 1975. Please quote reference 70/A.T. THES.

WALES
THE UNIVERSITY COLLEGE OF WALES
Aberystwyth

CHAIR OF STATISTICS

The College Council invites applications for the Chair of Statistics which will be vacated from 30 September, 1975 for invalid retirement of Professor Owen T. Davies.

Applications should be lodged in duplicate, with the Registrar, The University College of Wales, Aberystwyth, Dyfed SY23 2AL, to whom further particulars may be obtained.

SOUTH AUSTRALIA
THE FLINDERS UNIVERSITY
SENIOR LECTURESHIP IN SOCIAL ADMINISTRATION

Applications are invited from suitably qualified persons for appointment to the above-mentioned position in the School of Social Sciences.

The successful applicants will be expected to teach in the graduate professional programme. Applicants will be registered from people specialising in the fields of social work and social welfare. Preference will be given to candidates with assessed qualifications and experience in teaching in the management of the discipline.

Salary Scales: Lecturer $A11,655 to $A15,645 (£6,928 to £9,297 approximately); Senior Lecturer $A15,084 to $A18,514 (£8,961 to £11,000 approximately) is on the F.S.S.U. basis.

Further information about the positions including conditions of appointment and details required of applicants may be obtained from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London WC1H 0PF. Applications should be lodged in duplicate, with the Registrar, The Flinders University of South Australia, Bedford Park, South Australia, 5042 by 31st August 1975.

SOUTHAMPTON
THE UNIVERSITY
TWO TEMPORARY LECTURESHIPS IN SOCIOLOGY

Applications are invited for two temporary lectureships in the Department of Sociology commencing 1st October, 1975. Candidates should have a good Honours degree in Sociology and an interest in the application of statistical theory and an interest in the application of statistical methods in social research. Those with a special interest in one of the following fields: social statistics, survey methodology, statistical models or social science, statistical mathematics, multivariate data analysis.

One post is for two years, with a strong expectation for a further year. Initial salary, according to qualifications and experience, on the Lecturer scale (£2,118 to £2,757) plus threshold payments (under review). Superannuation.

The second post is for two years. Appointment, according to qualifications and experience, on the Lecturer scale (£2,118 to £2,757) plus threshold payments (under review). Superannuation.

Further particulars may be obtained from Mr A. I. Small (ref. 3/3/1), The Universities Appointments Bureau, 36 Gordon Square, London WC1H 0PF, to whom applications (seven copies) should be sent not later than 7th August, 1975. Please quote reference 70/A.T. THES.

TASMANIA
THE UNIVERSITY
LECTURESHIPS (2) IN INFORMATION SCIENCE

Applications are invited for appointment to Lecturer in Information Sciences within the Faculty of Science. Candidates with interests in this development are invited to advisory group (Elizabeth Computer Centre) offering advice on links to teachers in the high schools and matriculation colleges of the State and to act as a focus for staff-wide effort and documentation. Also interested persons with a keen interest in the teaching of community psychology and its interactions in other areas should be urged to interest and stimulate them in the University. Informals and the newly-formed Health in the Australian Computer Society.

The development of the department's research has not been abandoned and there will be considerable flexibility in deciding on directions.

The salary scale for lecturers is $A11,655 to $15,645. Appointment will be offered within this scale according to qualifications and experience.

Further particulars, conditions of appointment and application forms available from the Association of Commonwealth Universities (Appts.), 36 Gordon Square, London W.C.1H 0PF.

Applications close on 6 October, 1975.

TASMANIA
THE UNIVERSITY
LECTURESHIP/SENIOR LECTURESHIP IN PSYCHOLOGY (CLINICAL)

Applications are invited for the above-mentioned post. Applicants should have postgraduate qualifications in clinical psychology and it is desirable that they have experience with patients in psychiatric hospitals or clinics. An interest in behaviour disorders of children or community psychology would be an advantage. The appointee would be expected to participate in teaching the undergraduate course and assisting in the development of courses of study. A higher degree or evidence of research would also be advantageous.

Salary scale: Principal Lecturer $A16,645 to $A18,514 (but to $A16,645 under review).

Further details and application forms obtainable from 1 August, 1975: from Personnel Officer, Coombs Chambers, Hobart, Tasmania, Australia 7001. Please quote ref. 0810. Please quote ref. 152 in all communications.

HERTFORDSHIRE
THE HATFIELD POLYTECHNIC
RESEARCH ASSISTANT IN PSYCHOLOGY

Immediate applications are invited from candidates who have a good degree in psychology for the post of Research Assistant in the Psychology Academic Group.

The successful candidate will assist in research and will be encouraged and will plan his own research interests and register for a Ph.D.

Unofficial inquiries in the first place may be made in writing to Dr. Gordon Sandison.

Salary: £1,833 to £2,041 per annum plus £141 local weighting.

Application forms and further details from the Staffing Officer, Hatfield Polytechnic, P.O. Box 109, Hatfield, Herts AL10 9AB.

Please quote reference 698.

Closing date: 8th August, 1975.

LEICESTER
THE POLYTECHNIC
SCHOOL OF ELECTRONIC & ELECTRICAL ENGINEERING
RESEARCH ASSISTANT (Radiovitreometer)

Applications invited from persons with a good honours degree, to undertake research for a Ph.D. degree. The research, under the direction of Dr. Gordon Dunn, will be concerned with the measurement and detection of the state of electronic circuits and hybrid computer techniques.

Salary scale: £1,999 to £2,347 per annum.

Further details and application forms obtainable from Staffing Officer, Leicester Polytechnic, P.O. Box 143, Leicester LE1 9BH.

LONDON
THE POLYTECHNIC OF NORTH LONDON
ADMINISTRATIVE ASSISTANT

Lothian Regional Council

NAPIER COLLEGE OF COMMERCE AND TECHNOLOGY

Department of Secretarial Studies

Readvertisement

SENIOR LECTURERS (A)

(two posts) (Ref. ISS/3/2)

Post 1: Responsible for Secretarial and allied subjects in the following courses: Diploma for Graduate Secretaries, the Diploma in Commerce, the Advanced Secretarial Certificate, the Royal Society of Arts Group Certificate and Day Release classes.

Post 2: Responsible for Secretarial and allied subjects in the following courses: The Scottish Higher National Diploma in Secretarial Studies and Evening classes, Shorthand/Typewriting in Full Time and Block Release Journalists Courses.

Department of Banking and Insurance

Readvertisement

SENIOR LECTURER (A) IN INSURANCE

Readvertisement

(Ref. 1BI/3/1)

The successful candidate will be responsible for the organisation and teaching of courses for the professional examinations of the Chartered Insurance Institute as well as the Insurance content of degree and other courses.

Department of Accounting

Readvertisement

LECTURER (A) IN TAXATION

(Ref. 1AC/4/11)

The successful applicant will be required to lecture up to final professional and degree standard and should possess an honours degree and professional qualifications.

Department of Printing and Publishing

LECTURER (A) IN PRINTING TECHNOLOGY/ADMINISTRATION

(Ref. 2PP/4/13)

Candidates must offer experience in print production Control/Development and Printing Administration. The successful applicant will be expected to teach printing technology/administration to students on the Higher Diploma course in Printing (Production and Administration).

Applicants should possess an appropriate degree and/or equivalent professional qualifications and preferably have had industrial/professional research or teaching experience.

SALARY IN the range

£3,216-£6,012 (bar)—£6,495 for Lecturer (A)

£6,000-£6,735 (bar)—£7,715 for Senior Lecturer (A)

with placement according to experience.

Further particulars and application forms from the Academic Registrar (T) Napier College of Commerce and Technology, Colinton Road Edinburgh EH10 5DT, to whom they should be returned by 1 August, 1975, quoting reference.

MANCHESTER
THE POLYTECHNIC
JOHN DALTON FACULTY OF TECHNOLOGY

RESEARCH ASSISTANT—POLYMATHS

Applications are invited for the post of RESEARCH ASSISTANT to commence 1 September, 1975, or as soon as ... after. The primary duty of the person appointed will be the ongoing supervision, up-dating and monitoring of the assessment schedule for "Polymaths" in a national polytechnic preliminary course in mathematics.

This will necessarily involve developing an interactive computerised system for a bank of objective test items in mathematics.

Applicants must have demonstrable practical skill in programming and a strong mathematics background (e.g. HND or Degree). Some knowledge of educational assessment methods, particularly objective testing, would be helpful.

Salary scale: £2,121 to £2,772 (under review).

For application form (returnable by 8 August, 1975) please send a self-addressed envelope marked "T/3107/J" to the Secretary, Manchester Polytechnic, Lower Ormond Street, Manchester, M15 6BX.

MANCHESTER
THE POLYTECHNIC
DEPARTMENT OF SOCIAL SCIENCE

RESEARCH ASSISTANT IN POLITICS

Applications are invited for the post of RESEARCH ASSISTANT in the School of Politics within the Department of Social Science in assist in ongoing research in the fields of local governmental studies and comparative government.

Candidates should be graduates in politics or an allied discipline and familiar with appropriate research techniques.

A limited amount of politics teaching may be expected.

The person appointed will be encouraged to register for a higher degree of the CNAA.

Salary scale: £2,121 to £2,772 (under review).

For application form (returnable by 11 August 1975) and further particulars please send a self-addressed envelope marked "T/3108/J" to the Secretary, Manchester Polytechnic, Lower Ormond Street, Manchester, M15 6BX.

WOLVERHAMPTON
THE POLYTECHNIC

PRINCIPAL LECTURER IN ACCOUNTING

(with special reference to the public sector)

A graduate member of the Chartered Institute of Public Finance and Accountancy is required to join the Department of Business Studies to lead and further develop a well established section offering a range of courses in Public Accounting.

SENIOR LECTURER/PRINCIPAL LECTURER IN PSYCHOLOGY

An appointment at Principal Lecturer grade would be of a subject leader for this developing area in the work of the Polytechnic.

An appointment at Senior Lecturer level would involve contributing to teaching, course developments and administration.

LECTURER 2 IN SOCIAL SCIENCE

The successful applicant must be able to teach Philosophy of Social Science. In addition he will be expected to be competent in two of the following disciplines: Economics, Politics, Sociology.

Application forms and details from The Establishment Officer, The Polytechnic, Wolverhampton WV1 1LY.

Colleges and Departments of Art

WEST SUSSEX
WEST SUSSEX COLLEGE OF DESIGN

FOUNDATION STUDIES

Part-time LECTURERS required from September in CERAMICS and others with a background of DRAWING, PAINTING, ARCHITECTURE and INTERDISCIPLINARY STUDIES.

Please reply in writing, giving full relevant details, as soon as possible to: The Principal, Nyal Parsons, College of Design, Union Place, Worthing (telephone Worthing 211181).

Administration

ABERYSTWYTH
THE UNIVERSITY COLLEGE OF WALES

Applications are invited from GRADUATES and other suitably qualified persons for the post of ADMINISTRATIVE OFFICER in the Academic Section of the Registry.

Salary range £1,809-£1,995 plus threshold (under review).

Application forms and particulars available from the Registrar, Closing date 8 August, 1975.

PRESTON
THE POLYTECHNIC

LECTURER 2 IN SOCIAL DOMESTIC AND SOCIAL ADMINISTRATION

Required for 1st January, 1976, or later.

Applicants should possess a good first degree or a relevant field and should have had experience of teaching at degree level.

Salary Scale Lecturer II: £3,216 to £6,495 (subject to confirmation). Application forms and further details ...

WOLVERHAMPTON
THE POLYTECHNIC

PRINCIPAL LECTURER IN GRAPHIC DESIGN

(£6,930 to £6,642 or £7,878 per enquiry)

An experienced Graphic Designer required for the development and administration of degree-level courses and research in this field. Extensive knowledge of Design Education and communication problems essential.

SUSSEX
INSTITUTE OF DEVELOPMENT STUDIES
UNIVERSITY OF SUSSEX
Falmer, Brighton, BN1 9RE

The Institute wishes to recruit within one year three people to administer a number of programmes for the Institute, responsible for the organisation of COURSES, SEMINARS and CONFERENCES. The ideal candidate would be a graduate with experience, and preferably some knowledge of developing skills, language and secretarial skills, familiarity with and having some knowledge of developing countries, should be in the range ...

USS UNIVERSITIES SUPERANNUATION SCHEME LTD

DEPUTY TO THE CHIEF EXECUTIVE OFFICER

Universities Superannuation Scheme Ltd is the Trustee Company which is responsible, at its office in Liverpool, for the operation of the new Superannuation Scheme for the academic staff of all UK Universities. The Scheme is compulsory for all new employees from April 1, 1975 and approximately 55,000 existing staff have an option to transfer to it over the five years up to 1980.

It is now proposed to appoint a senior person who will be involved in a variety of interesting aspects of pension scheme administration, including maintenance of records, calculation and payment of benefits, dealing with up to 750,000 individual life insurance policies and accounting requirements, and who will deputise for the Chief Executive Officer.

Applicants should have a degree and a professional qualification and wide experience of pension fund administration in a responsible position. A knowledge of computer data processing, life assurance, accounting or university administration would be an advantage. A salary of £7,000 is proposed for this appointment.

Applications should be sent to:

P. Stirrup MA FIA FBCS, Chief Executive Officer
USS Ltd
Sun Tower Building
22 Water Street
Liverpool L3 1BN

For a wide range of good appointment opportunities occurring in your subject you need to follow the THES week by week.

Overseas

AUSTRALIA

THE VICTORIAN COLLEGE OF THE ARTS

The Victorian College of the Arts was established in Melbourne in 1973 as a College of Advanced Education in cardinal courses at diploma and degree level for the Fine and Performing Arts. The Schools of Art and Music are already operating. A School of Drama will commence teaching in 1976 and a School of Dance is planned to open in 1977. A Junior School in music and dance is planned to open in 1978. The College is adjacent to and will operate in close liaison with the Victorian Arts Centre. The Director of the College is Mr. Lenten Parr.

DEAN — School of DANCE

DUTIES — To be responsible for the planning, conduct and development of the School. This will initially involve planning courses, advising an appointment of staff and plans for the building programme.

QUALIFICATIONS — Applicants should have achieved professional distinction in the field of dance and/or have experience in dance education.

The appointee will be expected to take up duties in April 1976.

Appointments of teaching staff are to be made in the following areas —

School of MUSIC
(Dean — John Hopkins)
Post 1950 Music
Orchestra, Ensemble & String Studies
Woodwind
Brass
Percussion

School of DRAMA
(Dean — Peter Oyston)
Technical Direction
Movement
Voice
Acting
Dramaturgy/Research

Appointments may be made within the following categories depending on qualifications and experience —

Dean, School of Dance $A23,000
Principal Lecturer $A18,671
Senior Lecturer $A16,954 to $A18,544
Lecturer $A11,635 to $A16,944

The courses in the College are all in the performance aspects of the arts. Applicants will need to be experienced practising artists as well as teachers.

FURTHER INFORMATION — Details of the College, these positions and the form of application required are available on request to —

The Administrator, The Victorian College of the Arts,
234 St. Kilda Road, Melbourne, Victoria 3004, Australia.

All correspondence should be marked "Confidential".
Applications should be lodged by 30 August 1975.

ENGLISH LANGUAGE TEACHERS

The Petroleum Institute of Tripoli requires English Language Teachers with B.A. qualification in English and teaching experience.

Please send applications to:

General Director,
Libyan Petroleum Institute,
P.O. Box 6184, Tripoli, Libya

Overseas continued

GIPPSLAND INSTITUTE OF ADVANCED EDUCATION

1976 Staff Appointments

In addition to currently advertised academic staff appointments available in 1975, the Institute is planning its 1976 staff appointments and it is anticipated that a number of additional new positions will become available in the following areas at either Principal Lecturer, Senior Lecturer or Lecturer level. These will be advertised in due course.

SCHOOL OF BUSINESS AND SOCIAL SCIENCES
- Business Studies — (Economics, Accounting, Administrative Studies, Law, Farm Management)
- Sociology/Welfare Studies
- Literature
- Mathematics

SCHOOL OF EDUCATION
- Philosophical and Historical Foundations of Education
- Sociology of Education
- Educational Psychology
- Curriculum Studies (Primary, Mathematics, English, Creative Activities/Art, Music, Drama, Physical Education)

SCHOOL OF ENGINEERING AND APPLIED SCIENCE
- Physics — (Environmental Physics, Applied Physics)
- Biological Sciences

SCHOOL OF VISUAL ARTS
- Art History
- Graphic Design
- Printmaking
- Sculpture
- Ceramics
- Multi-media Studies

LIBRARY
- Deputy Librarian

Potential applicants for appointments in the above areas in 1976 are invited to make enquiries and register their interest with the Institute at this stage, and to submit a brief resume of personal particulars, qualifications and experience. The Institute will be pleased to provide preliminary information concerning the proposed staff appointments for 1976, and terms and conditions of employment.

Current academic salary scales are:

Principal Lecturer — $(A)18,671 p.a.
Senior Lecturer — $(A)16,954 to $(A)18,544 p.a.
Lecturer — $(A)11,635 to $(A)15,944 p.a.

Enquiries should be addressed to:
The Registrar,
Gippsland Institute of Advanced Education
P.O. Box 42, Churchill, Victoria, Australia, 3842.

AUSTRALIA

Prahran College of Advanced Education

HEAD, Staff Development and Research Unit

Prahran College of Advanced Education is a public, post-secondary institution located in inner-suburban Melbourne, Australia.

DUTIES. To be responsible to the Director for the provision of pre-service and in-service education for 200 staff and for a programme of applied research on the College itself.

QUALIFICATIONS. A higher degree in education and experience in teacher-training and/or applied research, preferably at a tertiary level.

SALARY. Within the Senior Lecturer range, $A15,954-$A18,544.

Applications, containing details of personal and academic background, work experience and listing three referees, close on September 15, with the undersigned, from whom further details may be obtained.

L. T. Cullen, Registrar,
Prahran College of Advanced Education,
142 High Street,
Prahran Vic 3181 Australia.

General Vacancies

CAMBRIDGE UNIVERSITY PRESS

seeks an

Editor in Economics

The Press requires an editor in Cambridge to help maintain and develop profitably an important economics list from the undergraduate textbook level upwards. The successful candidate will take advice on manuscripts submitted, to see books through the press, and to assist the Publishing Director in the Social Sciences in the development and maintenance of the list. The post should appeal to a young graduate in economics wanting to make a career in publishing.

Experience in publishing, research or teaching an advantage. Preferred age-range 21-28; salary will be competitive, dependent on age and experience.

Candidates should apply, giving brief details of age, education, qualifications, career to date and present salary, to:

M. H. Black, Publisher,
CAMBRIDGE UNIVERSITY PRESS,
The Pitt Building, Trumpington Street,
Cambridge, CB2 1RP.

General Vacancies

A job you'll enjoy

Many graduates find that the work they take up does not present them with the kind of intellectual challenge they seek, and to which they have become accustomed as students. This is unlikely to be a problem with the work of an Inspector of Taxes.

As an Inspector in charge of a Tax District you are responsible for the tax affairs of individuals and companies large and small in that area. You will deal personally with the more important cases, which will demand all your intellectual skills in reaching a fair and proper decision. In negotiation with a taxpayer's professional advisers you will need to exercise in full the intensive training in law and accountancy you receive. During your career you could take charge of the tax affairs of an entire district, enjoying wide powers of discretion. You may also spend periods on more specialised aspects of taxation and acquire an enviable professional expertise—in itself a valuable career asset.

Qualifications: Under 32 and a degree with honours—at least second class honours ability. Final Year Students may apply.

If you start at 21, your salary should be over £4,200 at 23 and over £5,600 at 27. By your mid-30's you should be in a post taking you to over £9,000. By 40 you could be in a post with the Tax Inspectorate or in general management in the Civil Service, taking you to £11,000 p.a. There are vacancies all over the country; and salaries in the London area are up to £400 higher.

To find out more, and for an invitation to visit a Tax Inspector, write to Civil Service Commission, Alencon Link, Basingstoke, Hants RG21 1JL. Please quote: reference A/320/L/8

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Tasmanian College of Advanced Education

Head of Burnie Study Centre

$A20,202

The Tasmanian Council of Advanced Education plans to establish a Study Centre in Burnie and to offer courses in 1976. Burnie is located on the North West coast of Tasmania amidst industrial, commercial and agricultural developments. The Head of the Study Centre will be expected to liaise closely with the Heads of Burnie College of Technical and Further Education, Hellyer College, the Adult Education Board, the Teachers Centre at Burnie and with the Heads of Divisions at the Mt. Nelson and Newnham campuses of the Tasmanian College of Advanced Education. The establishment of the Burnie Study Centre will meet the needs of students through the co-operative endeavours and the joint use of physical and human resources of all elements in the post-secondary education sector in the region. The Head of the Centre will play a significant role in evaluating the post-secondary educational needs of the community.

Applicants should possess sound academic qualifications in relevant disciplines and appropriate professional experience, including teaching experience at the tertiary level. They must show evidence of ability to teach with audio visual materials and self-paced or personalised instructional programmes. Experience in external studies would be an advantage.

Particulars, relating to conditions of service and information concerning housing, are obtainable on application to the Secretary to the Council, Mr G. L. Klein. Applications, accom-

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MINISTRY OF DEFENCE

Burnham Lecturer Grade 1

IN THE OVERSEAS ENGLISH WING, ARMY SCHOOL OF LANGUAGES, BEACONSFIELD

Applications are invited from well-qualified teachers to fill the post as soon as possible.

DUTIES. Principally to teach English as a foreign language to a variety of service students from the Brigade of Gurkhas and from Commonwealth and Foreign Forces using courses material for specific military purposes designed in the Army School of Languages. The teacher may be called upon to assist in the design and production of course material and audio-visual aids and to undertake escort duties for external visits to military displays and centres of interest. The teacher may also, if qualified, be called upon to assist in foreign language teaching to British service students. Teachers are also expected to take special interest in the welfare of students under their control.

QUALIFICATIONS. Teaching qualification and experience are essential. Preference will be given to applicants with qualification in the teaching of English as a Foreign Language. Knowledge of Modern language teaching techniques is essential.

SALARY. In accordance with the current scales for Teachers in Establishments for Further Education, i.e. £1,869-£3,633 p.a. plus threshold. A non-pensionable allowance of £468 p.a. will be paid for the slightly longer teaching year.

SUPERANNUATION. The appointment is superannuable under the Teachers' Superannuation Scheme.

APPLICATIONS. Requests for application forms and further

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